The History of the International Grassland Congress - 1927 to 2020





V. G. Allen • R. J. Wilkins • G. D. Lacefield • S. R. Smith

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The History of the International Grassland Congress -

1927 to 2020

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Cattle grazing observed by drone. Created by Philip Brown, Texas Tech University, Lubbock, Texas, USA

Dedication to Professor Ross Humphreys



Ross Humphreys had a long career in grassland science as a teacher and researcher at the University of Queensland in Australia. Ross attended his first International Grassland Congress in Reading in 1960 and was thereafter a regular and enthusiastic supporter of IGC.

Ross became the 'guru' of IGC history. We are privileged to tread in his footsteps and to build upon his publications. His book, *The Evolving Science of Grassland Improvement*, published in 1997, traced the development of grassland science over a 60-year period, largely through the changing contributions to the International Grassland Congresses. An Appendix to the book detailed the Congresses from 1927 to 1993 with analyses of the number of participants and their geographical origin and the numbers of papers on different topics. He followed this up with invited papers at the XIX Congress in Brazil and the XX Congress in Ireland in 2005.

These papers stimulated us to embark on this fuller account of the Congresses, to delve further into origins and nature of the first Congresses, and to update our history to the present time. We have been privileged to know Ross well and are delighted that Ross, who lives in retirement in Brisbane, has been able to read and comment on key sections of this book. It is a great pleasure to dedicate this book to Professor Ross Humphreys.

The History of the International Grassland Congress – 1927 to 2020

Preface

What we know about the beginning of the International Grassland Congress is that it was the meeting of a few men who shared a common interest in grasslands and a sense of urgency to recognize the importance of grassland agriculture and its role in food security. They gathered in Leipzig, Germany, in 1927 and decided that there was value in meeting periodically in the future. As we follow the progress of this first and future meetings, we see the name of the meeting evolving to include broader membership from increasingly distant places, and we see the implications of the name for the type of organization this was to become. We see the impact of the Second World War, the loss of the organization's funds, and the role of grasslands in the conflict. This war and subsequent conflicts, as well as concerns over increasing global population and food security, are reflected in many Congresses; there are also repeated references to the contributions of grassland science to global peace. The need for organizational structure becomes an evolving issue impacting many of the Congresses until the first Constitution is written and accepted in 1977. As the Congress increases its reach and impact, its relationship with other organizations and agencies becomes both an opportunity and a concern.

Topics of interest change as research, experience, and new technologies move grassland science and practice forward and as new researchable needs evolve. We find, however, that many basic principles, methods, and objectives emerging from the early research and collaboration in grassland agriculture remain foundational to our knowledge, research, and teaching today.

Over the 93 years of this Congress, grassland science and practice have come far and continue to progress. But there remain concerns as global population pressures continue to escalate. Food security, a motivating factor in even the first Congresses, remains a compelling challenge with security of nations in the balance. Population expansion accelerates losses of grazing lands to other objectives. As global populations move relentlessly away from an agrarian connection, pressures on our grasslands for other uses are reaching crisis proportions.

At the XX International Grassland Congress in Ireland in 2005, Professor Ross Humphreys provided an overview and update of the History of the IGC from its beginning in 1927 in Leipzig, Germany (Humphreys, 1997; 2001; 2005). This important documentation of our history was both timely and crucial for preserving our knowledge of the IGC over this 78-year period. Professor Humphreys personally knew much of this information, and along with colleagues, he gave us insights into our organization and documented many statistics. Professor Humphreys (2001) quoted George Santayana (1920), saying, "Progress, far from consisting in change, depends on retentiveness. Those who cannot remember the past are condemned to repeat it." As we trace our history, we see the truth and the crucial importance of this statement.

As we go forward into the future there will be more challenges, but we must learn from the past – a past that has positioned us and our colleagues in other organizations around the world to play an ever more crucial role on our global stage. If civilizations were born in our grazing lands, perhaps it is our grazing lands that will ultimately provide the pathway to a survivable future for humankind. From its beginning, the IGC has played, and will continue to play, a crucial role.

As we have written this account, we have attempted to go further into the stories behind the numbers and the events to present more of the 'who,' 'why,' and 'how' about the road our Congress has travelled. Much history has been told by those who worked with the organizational challenges of the Congress and by those who gave presentations at opening sessions or during business meetings. Through their eyes, we see the concerning issues of the day and their visions of the future. Perhaps most of all, we feel their passion for addressing both local and global challenges through solutions found in the grasslands, solutions that may ultimately determine the destiny of the human race. Our objective has been to preserve and update the contributions of Professor Humphreys and to collect the knowledge and wisdom of persons, both living and deceased, who lived this history. This is their story. And this, in their words to the largest degree possible, is the ongoing story of the International Grassland Congress.



Magnus Elofson (left), father of Anders Elofson, one of the four founders of the IGC. Picture was taken about 1900 in the district of Värmland in Sweden where Anders Elofson grew up. The horse's name was Brownie! (Picture provided by Peter Edling.)

Acknowledgements

As we have researched the history of the International Grassland Congresses and written this account, there have been many individuals who have contributed to this project. Without their help, many of the pictures and much of the information that was found, especially concerning the first six Meetings/Congresses, would not have come to light. We are also truly indebted to several libraries and universities for their help in locating information and making it available to us. Some individuals contributed new, previously unpublished information and helped with translating original materials. Others assisted with the technical aspects of putting this manuscript together for publication. Still others have helped to review various sections as the writing progressed or reviewed the entire manuscript once assembled. We have attempted to put the many who contributed to this work into the following categories, indicating the type of help they provided. Many appear in more than one category. To all who helped, we are truly grateful and indebted!

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and to Others who helped!

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Jürgen Pickert, from the Leibnitz Centre for Agricultural Landscape Research, Germany, was able to access key documents relating to the inaugural meeting in Leipzig, the founding fathers of the International Grassland Congress, and other critical pieces of information. His knowledge of grassland science was crucial in increasing our understanding of the contributions to the first three meetings, all of which were published in German. Finally, his experience working at the Paulinenaue Institute for Forage Research in the German Democratic Republic (GDR) for many years directly following the 50th Anniversary Congress in Leipzig provided us with insight to that Congress and its large impact in the GDR. Thank you, Jürgen, not only for the information you provided, but also for your enthusiasm and encouragement during the preparation of this book.

Dirk Philipp, University of Arkansas, USA, translated numerous documents from the original German into English, allowing us to read the information about the early years of the Congress. He helped us to understand beyond the words and to gain insight into the people and the times in which they were living.

Peter Edling, grandson of Anders Elofson, President of the Second Meeting, gave us windows into the past through numerous pictures from his grandfather's collection. He shared his first-hand memories of his morfader (his mother's father) and many insights into Elofson's personal life and his professional passions and accomplishments. Peter, because of your help, we will now know why your mother told you that "your Grandfather was a very important man!"

Number	Location	Year	Region
1	Leipzig, Germany	1927	IX
2	Uppsala, Sweden, and Denmark	1930	IX
II	Zürich, Switzerland	1934	IX
Fourth	Aberystwyth, Wales	1937	IX
Fifth	Noordwijk, Netherlands	1949	IX
Sixth	State College, Pennsylvania, USA	1952	Ι
Seventh	Palmerston North, New Zealand	1956	V
Eighth	Reading, England	1960	IX
Ninth	São Paulo, São Paulo, Brazil	1965	III
Х	Helsinki, Finland	1966	IX
XI	Surfers Paradise, Australia	1970	V
XII	Moscow, USSR	1974	Х
XIII	Leipzig, German Democratic Republic	1977	IX
XIV	Lexington, Kentucky, USA	1981	Ι
XV	Kyoto, Japan	1985	VI
XVI	Nice, France	1989	IX
XVII	Palmerston North, New Zealand, and Rockhampton, Queensland, Australia	1993	V
XVIII	Winnipeg and Saskatoon, Canada	1997	Ι
XIX	São Pedro, São Paulo, Brazil	2001	III
XX	Dublin, Ireland, and United Kingdom	2005	IX
XXI	Hohhot, Inner Mongolia, China	2008	VI
XXII	Sydney, Australia	2013	V
XXIII	New Delhi, India	2015	IV

The International Grassland Congress Venues and Regions Represented

Note: Arabic Numbers were used for the first and second Meetings while Roman Numerals were used for the third Congress. From the fourth though the ninth Congress, the number of the Congress was written. At the tenth Congress, Roman Numerals were again used and have remained consistent from that point through the XXIV Congress.

Acronyms and Words that Require Further Explanation

- AFGC: American Forage and Grassland Council
- **CSIRO**: The Commonwealth Scientific and Industrial Research Organisation. An Australian federal government agency responsible for scientific research.
- **ECR:** Early Career Researchers
- EGF: European Grassland Federation
- **ETH:** University in Zürich, Switzerland, formerly known as Eidgenössiche Technische Hochsschule. Now known simply as ETH.
- FAO: Food and Agriculture Organization of the United Nations
- **GDR:** German Democratic Republic
- **GPS**: Global Positioning System
- IGC: International Grassland Congress
- IRC: International Rangeland Congress
- **RM:** German Reichsmarks
- **SRM:** Society for Range Management
- **Teagasc:** The Agriculture and Food Development Authority in the Republic of Ireland. This national body provides integrated research, advisory, and training services to the agriculture and food industry and rural communities.
- **Tri-Societies**: American Society of Agronomy; Crop Science Society of America; Soil Science Society of America
- UK: United Kingdom
- **UN**: United Nations
- **UNEA:** United Nations Environment Assembly
- USA: United States of America
- **USDA-ARS:** United States Department of Agriculture-Agricultural Research Service
- USSR: Union of Soviet Socialist Republics
- WWII: World War II
- **ZALF:** Leibniz Centre for Agricultural Landscape Research, successor institution of Paulinenaue Institute
- **Geheimrat:** A non-academic title and honor bestowed in Germany until 1918. English language equivalent is Privy Councillor (Brockhaus, 2018).
- **Güterdirektor:** Honorific form of address. 'Gut' (pl. 'Güter') is a rather large commercial or experimental farm. If several 'Güter' are managed under a joint director/administration, the 'Güterdirektor' is the head of this joint administration (Aereboe, 1920).

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To the Reader

We attempted to preserve, as much as possible, the voice and manner of speaking of authors, speakers, and Congress members. At times, this meant allowing original language choices to remain intact. You may notice some language choices that are somewhat different than conventional English writing. This was entirely intentional, for we believe in preserving the authenticity of the history of the International Grassland Congress and its members.

Throughout this document, information quoted from published sources is presented exactly as published. No corrections were made unless indicated in () following the original.

I envísage the central role of Grassland Congresses as that of assístíng scíentísts workíng ín specíalíst areas to conceptualíze theír work ín wíder ínterdíscíplínary contexts.

Professor L. R. Humphreys, Australia (Humphreys, 2001)

Chapter 1 In the Beginning

Birth of the Grassland Congress

P. V. Cardon USA

From his 1952 presentation at the Sixth IGC in Pennsylvania, USA (Cardon, 1952)

"Constructive effort toward grassland improvement was limited initially even in the most alert countries. But in time, here and there throughout the world, systematic study yielded facts. The accumulation of facts and their appraisal clarified recognizable principles. An establishment of those principles prompted action. It had become apparent that more and better grass was attainable; and that, in attaining it, soil and water could be conserved, soil productivity could be restored and sustained, feed supplies could be assured, and food supplies, in quantity, quality, and variety more nearly aligned to requirements, could be produced.

"These possibilities took form gradually. Probably there was little spontaneity in their emergence. Also, they did not develop simultaneously at a uniform rate. They just grew in the minds of observant men in scattered places. They are still growing. Their continuing growth is suggestive of the vigor and adaptability of the thinking from which they arose.

"The results of scientific study, observation, and experience were exchanged in correspondence between men of like minds and appeared successively in more formal reports published in technical journals or other media. Expanding knowledge stimulated further thought more widely applied. This led thinking men to sense an opportunity for free and open discussion of commonly recognized but unsolved problems — for a forum where findings, ideas, and experiences could be exchanged, where a mingling of minds could generate more potent activity. Sensing this need, these men did something about it. They brought about the organization of conferences, or their equivalent, in localities or regions or on national proportions. But it remained for four Europeans to see the need at an international level and to do something about it.

"These four men were: Dr. A. Elofson of Uppsala, Sweden; Professor A. Falke of Leipzig, Germany; Professor A. Volkart of Zürich, Switzerland; and Mr. (Karl) Schneider-Kleeberg of Altenberg bei Wetzlar, Germany.

"Early in the 1920's they had begun visiting each other and exchanging opinions concerning their mutual interests in grassland improvement. Then they began to cooperate with each other the more fully to satisfy those interests. One of their early cooperative endeavors was to develop a method for determining the yield of pastures, based upon recommendations made by Professor Nils Hansson of Sweden.

"The advantages inherent in this meager beginning of international cooperation, and the inspiration each of the four men derived from it, led to their recognition of the need for more extensive international cooperation" (Cardon, 1952). And in 1927, at the initiative of Professor Friedrich August Falke, a well-known German scientist (<u>Appendix A-1</u>), the first Meeting was organized that would become a Congress that continues today.

Professor Falke recognized that promotion and development of grassland agriculture had been in effect "for decades" in other countries. He talked of the "groundbreaking work" by Stebler in Switzerland, Elofson in Sweden, and Von Weinzierl in Austria, and argued that to further develop grassland agriculture in Germany and to promote these efforts, contacts to those working groups should be established. "It had been suggested from various sides" to initiate contact among the central and northern European countries.

The First Five Meetings

The Inaugural Meeting - Leipzig, Germany - 1927¹

In the spring of 1927, Professor Falke, as Head of the Department of Field Cropping,



Professor Friedrich Falke, President of the First Meeting of Grassland Scientists From Report of the First Meeting, (Provided by Peter Edling.)

and through the Field Crop/Tillage Department of the German Agricultural Society of which he was Chairman, issued a letter of invitation to 50 experts in the field of forages in the Northern and Central European Countries (Appendix B-1).

The letter is summarized as follows:

The purpose of the meeting was 1) Exchange knowledge and practical experience in grassland agriculture in Sweden, Norway, Denmark, Finland, the Netherlands, Austria, Switzerland, and Germany and 2) Development of natural food sources for livestock and to increase their production.

Professor Falke notes in the invitation that yields per unit area on pastures (particularly those in mountainous areas) are well behind other forms of agriculture. He further states that activities have been

on the way in Germany to get such a meeting and cooperation going, and he is kindly asking if his European colleagues would like to take part. The Meeting should be an excursion and visit of relevant grassland agriculture activities.

Professor Falke suggested a timeline: May 21 to 31 with Meeting in Leipzig May 27 to 28 for which he requested reports from attendees on the current grassland situation and activities. He further requests an RSVP from attendees and the general title and content their reports (DLG, 1929).

The timeline for the meeting included:

- May 20, 1927
 - Arrival in Bremen (a major port in northwestern Germany)
- May 21 to 23
 - o Excursion around Northwest Germany
 - Visit of moorlands and melioration projects

¹ Translated from the original (DLG, 1929) by Dr. Dirk Philipp.

- Leaders: Professor Falke, Professor Dr. Tacke (Head of Moorland Research Station, Bremen); Dr. Koch (German Agricultural Society, Berlin; Agronomist)
- May 24 to 25
 - \circ ~ Visit to a griculture fair of the German Agricultural Society in Dortmund
- ◆ May 26
 - Train ride to Leipzig
- May 27 to 28 (Friday and Saturday)
 - In-house meeting (at the Agricultural Institute of the University of Leipzig)
 - Visit of research stations around Leipzig
- May 29 to 30
 - Visit of Saxony
 - They visited the middle and eastern part of the Erzgebirge which is located in the south of Saxony.
- May 31
 - Last get-together
 - Final conclusions, action items

Thus, this first meeting addressed the growing need for cross-European cooperation in the area of grassland agriculture and was titled **I. Tagung der Weide- und Wiesenwirte aus den nord- und mitteleuropäischen Ländern in Deutschland vom 21. bis 31. Mai 1927** (I. Meeting of the Pasture and Meadow Agriculturists from the North- and Central European Countries on May 21-31, 1927 (<u>Appendix C-1</u>; DLG, 1929)).

Professor Falke served as President. Sixteen scientists representing seven European countries attended. These were (numbers in parentheses indicate number of participates): Austria (1), Denmark (2), Finland (1), Germany (4), Norway (1), Sweden (5) and Switzerland (2). Delegates from the Netherlands were unable to attend at the last moment. Two of the founders who attended were Dr. Anders Elofson of Uppsala, Sweden, and Mr. Karl Schneider-Kleeberg from Niederwalluf/Rhein who served as director of a research farm in western Germany.²

² Karl Schneider-Kleeberg was Head-Director of farms owned by the City of Frankfurt am Main, which also had a university. He was involved in teaching and training courses at this University, and he gave lectures in general agriculture. Mr. Schneider-Kleeberg was one of the early pioneers in the development of the intensive system of grassland management in Germany (McConkey, 1931).

As suggested in the letter of invitation, they met in Bremen and toured through northern Germany, including Emden, Berlin, and Dortmund. Upon arrival in Leipzig, the group attended two days of scientific discussions on different aspects of grasslands. In Professor Falke's welcome to the delegates at the beginning of the meeting (<u>Appendix C-1</u>), he states, "It is my pleasure to welcome all of you, not only on behalf of the German Agricultural Society, but also in the name of the Agricultural Institute of the University of Leipzig, in which facilities our conference takes place." Falke further mentions that Room 20, the lecture hall where they were meeting, was the exact place that training courses for pasture agriculturalists had begun 20 years before in 1907 (Falke, 1929; Lampeter, 1965; <u>Appendix A-1</u>).

In his opening address, Professor Falke was clearly concerned that grassland agriculture was not on par with other branches of agriculture nor with the general economy. He was concerned with food security and argued that "feeding a population (of) a country by itself is the basis of public wealth, productivity and general wellbeing." Professor Falke had been a combat officer during the First World War, later becoming an economic officer in the administration of the German-occupied territories of Belgium, and, thus, knew first-hand the essentiality for a country to feed itself.

By the end of the meetings and tours, those present agreed to hold future conferences every 3 or 4 years. A Resolution was passed regarding the areas they decided needed further work as follows:

- 1. Liming of pastures and meadows
- 2. Overseeding perennial pastures
- 3. Influence of origin and breeding of legume and grass seedlings on yield of perennial pastures
- 4. Set-up of grass and clover mixtures for the different demands of forage crop production
- 5. Experimental design in grazing settings
- 6. Transition of grass clover mixtures into perennial pastures
- 7. Influence of groundwater level on yield and quality in perennial pastures and meadows
- 8. Manure (slurry) application
- 9. Hay making and forage preservation
- 10. State and professional activities for fostering pasture and meadow agriculture

While this first meeting was concluded in Dresden at the end of the second tour, this was only the beginning of what would become the International Grassland Congress with global participation and impact.

Another who attended this first meeting was Mr. Richard Geith who lived in Leipzig (<u>Appendix A-6</u>). He was a Graduate Assistant of Professor Falke, and he helped Dr. Falke during the meeting. After the meeting was over, he received a letter from Professor Falke as follows (<u>Appendix D</u>):

"During the time between May 21 to 31, 1927, the first meeting of the pasture and meadow agronomists from the north and central European countries took place in Germany. Your friendly welcome and hospitality contributed considerably to the success of this entire endeavor. We would like to thank you for all the organizational effort and hospitality toward the participants, which will remain in good memory. We hereby submit to you the complete report of the first meeting."

German Agricultural Society, Cropping Department, signed Falke³

Mr. Geith (to become Dr. and Professor Geith) remained involved through the fourth Congress in 1937. The Second World War suspended further Congress activities at that point, and Professor Geith did not survive the war (<u>Appendix A-6</u>).

Dr. Anders Elofson of Uppsala, Sweden (<u>Appendix A-2</u>), one of the four men who was instrumental in initiating collaboration, was present and at the end of the 'in-house' meeting in Leipzig; Dr. Elofson was unanimously elected President of the second meeting. The location of the meeting was driven by the location of the President; thus Uppsala, where Dr. Elofson resided, was chosen as the site.

³ Translated from the original (DLG, 1929) by Dr. Dirk Philipp.

The Second Meeting, Uppsala, Sweden - 1930⁴

This meeting was entitled 2. Tagung der Weide - und Wiesenwirte aus den nord -



Dr. Anders Elofson, President of the Second Meeting. (Provided by Peter Edling, grandson of Dr. Elofson.)

und mitteleuropäischen Ländern in Schweden und Dänemark vom 25. Juni bis 5. Juli 1930 (2. Conference of the Pasture and Meadow Agriculturists from the North and Central European Countries in Sweden and Denmark, 25 June to 5 July, 1930 (<u>Appendix C-2</u>). Letters of invitation were sent (<u>Appendix B-2</u>). During these early years, the names of these meetings were apparently chosen by leadership in the country where the meeting occurred. It was, however, at this second meeting that they refer to this as Invitation for the 2. North - and *Central-European Grassland Congress*. At the end of the second Congress report, attendees refer to the International Grassland Congress Association (DLG, 1933).

Dr. Elofson had been elected President at the end of the first meeting in Germany. Both Professor Falke and Dr. Geith from Germany attended and

participated in the second meeting in Sweden. In his introductory remarks, Dr. Elofson thanked Dr. Geith for his "diligent recording of the minutes." Dr. Geith presented a paper entitled, *Pasture Forage Mass Assessment in Germany*. His paper described a method, worked out by Professor Falke, to compare pasture productivity determined by different methods "based on Kellner's starch equivalent - a method already well-known in animal nutrition" (Geith, 1933).

Another who attended from Germany was Güterdirektor⁵ Karl Schneider-Kleeberg, who was one of the four original founders of the Congress. He presented a paper on mole drainage, a method developed in England to remove excess water from soils. This method greatly reduced the costs of draining poorly drained clay soils to improve productivity and soil health (Schneider-Kleeberg, 1933).

Canada was represented by Oswald M. McConkey who was a graduate student completing his Ph.D. degree at Cambridge, England, at the time. He was the first from outside Europe to participate in the Congress, and he presented a report entitled *Meadows and Pastures in Canada*. In 1931, Dr. McConkey published *Recent Advances*

⁴Translated from the original (DLG, 1933) by Dr. Dirk Philipp.

⁵ The Head Director of one or several experimental and commercial farms (page xv).

in Pasture Management, which is cited in this History. He participated in the Third and



Dr. Oswald M. McConkey, Guelph, Canada. (Provided by The University of Guelph.)

Fourth Congresses before serving in the military during World War II.

The number of participants grew from 16 in Leipzig to 58 in Uppsala. They represented 13 countries, including Austria (1), Canada (1), Denmark (3), Estonia (3), Finland (4), Germany (12), Latvia (1), Lithuania (2), Netherlands (2), Norway (4), Sweden (19), Switzerland (3), and the United Kingdom (3). "At that time, England and some of the British Dominions were represented. But there was still a pronounced disposition to limit cooperation to northern and central Europe where, it was argued, comparable environmental conditions prevailed" (Cardon, 1952).

The second meeting began at Ultuna, located 5 kilometers

south of central Uppsala. It is the site of the Swedish University of Agricultural Sciences. The group was photographed standing in front of the new Grassland Institute. Identified in this picture (front row from left to right) is Dr. Anders Elofson. He is the third from left with his hand on the shoulder of an unidentified man in front.

Friedrich Falke is likely the one standing fifth from the left in a dark suit and hat. Wahlen⁶ 'Fritz' is between Falke and Katharina Schmidt Elofson, wife of Anders Elofson. The young girl on the far right is Marta, born in 1914, the daughter of Anders and Katharina Elofson. She is the mother of

Peter Edling, contributor



The participants in front of the new Grassland Institute in Ultuna. [Picture included in the report of the Second Meeting (DLG, 1933).]

to this History and grandson of Dr. Elofson (Peter Edling, Personal Communication).

⁶ Friedrich Traugott Wahlen was a Swiss agronomist and politician. He was responsible for the Wahlen Plan during World War II aimed at reducing food importation and increasing agricultural production. He held high political positions at both national and international levels including the rotating position of President of the Swiss Republic in 1961. He served as Second (Vice) President at the II Congress in Sweden.
"This building contained a flat where Director Elofson lived with his family. From his office he could keep close watch on the labourers. In other words, he lived day and night in the middle of his work" (Peter Edling, Personal Communication).

The group visited Carl von Linné's home that was nearby. Carl Linnaeus (before his ennoblement) was the Swedish botanist, physician, and zoologist, who developed the modern system of binomial nomenclature. The participants met in Uppsala from 25 to 28 June.

In his opening remarks, Dr. Elofson stated that it is a "great pleasure for us to contribute to the cooperation of various nations" (Appendix C-2). Following the model of the first meeting, participants gave reports on the status and challenges of grassland agriculture by country (DLG, 1933). Reports emphasized: importance of grassland farming (in Sweden it was stated that "grassland farming is the most important branch of Swedish agriculture"), breeding and selection of new clovers and grasses, the gradual change in human diets toward more easily digestible high-grade food rich in protein where meat and milk products were important, winter-hardy forages, and costs of production vs. income from products of grasslands.

Excessive soil water focused on drainage to improve pastures, use of the moledrainage technique as described by Schneider-Kleeberg, and the challenge of soil water close to the surface making trench silos difficult in the Netherlands. Participants expressed their desire that cattle "fulfill their original functions" i.e., the utilisation of roughage and, thus, they discussed quality and quantity of forages as well as intensified systems of pasture management, manuring, and the use of nitrogen and phosphatic fertilizers. Ecology of range floras, range management, and seed production were described in the Canadian report.

Development of techniques for comparison among pastures as measured by milk production, growth, or simply maintenance, and the tradeoff between yield and quality of forages were of concern in Germany. Forage preservation, especially as silage, but also as hay was discussed. These and other topics were addressed and summarized in the proceedings (DLG, 1933).

The participants departed Uppsala on 29 June and began touring through both Sweden and Denmark. They traveled largely by trains, but also by steamer boats and automobiles. They visited pastures in Balinge, Nyköping, wall protections around pastureland near Linköping, and on 1 July they visited pastures on private operations in Rabelöf and Odersberga. The next day they toured a plant breeding station and visited a research station near Copenhagen, Denmark. In Copenhagen, they had breakfast at the Restaurant Langelinie Pavillonen and lunch at Restaurant Nimb Hotel, both still in operation in 2020 and very prestigious. After leaving Copenhagen, they stopped to visit various private operations; and on the last day, they made a final visit to a research station. Before they adjourned, they discussed the third meeting and they "presumed/counted on Dr. Volkart" being the next President. Dr. Volkart was not at this meeting, but they received a message "from Dr. Volkart, the new President, [saying] the meeting will be postponed from 1933 to 1934."

The III Congress, Zürich, Switzerland – 1934



Professor Albert Volkart. President of the III Congress. Picture taken in 1925 by Johannes Meiner. (Provided by Josef Nösberger.)

that continues today.

The III Conference was called III. Grünlandkongresses der nord- und mitteleuropäischen Länder in der Schweiz 18. bis **20. Juli 1934.** (III Grassland-Conference of the North and Central European Countries in Switzerland, July 18th to 20th 1934) and was held in Zürich, Switzerland. Attendance grew to 200 participants from 18 countries. Professor A. Volkart of Zürich, one of the original four founders, was President (Appendix A-3). Professor Volkart opened the meeting by expressing great pleasure at the number of participants from English speaking countries as Switzerland historically had more contact with France than with Great Britain (Appendix C-3). He acknowledged that a number of the most important forage plants had been introduced from Great Britain. Professor Volkart expressed concern that efforts to improve and increase pasture land was coming at a cost of the disappearance of rare plants – a concern

It was in the Report from this meeting that the *Statues (Statutes) of the Society* International Grassland Congress (Appendix E) was written, stating that "The International Grassland Congress is a society with the purpose of enabling and fostering the exchange of the practical experiences and knowledge among experts related to grassland agriculture" (ELVA, 1934).

Professor Falke and Dr. Elofson, Presidents of the first and second meetings, respectively, were present as well as Dr. Geith, who had served as Secretary for both of these previous meetings. Professor R. G. Stapledon, who would become President of the Fourth Congress, participated in Switzerland as well. Turkey was represented by Professor Falke who was working in Ankara, Turkey, at the time (Appendix A-1). His paper, entitled *Biological Observations About the Growth of Grazing Animals*, is included in the Proceedings. South Africa and Canada were also represented at this meeting. R. L. Robb, Pretoria, South Africa, presented a paper entitled *The Grasslands* of South Africa. Dr. O. M. McConkey (Guelph, Canada) was unable to attend although a summary of his paper, Utilization of Hay and Pasturage in Eastern Canada, is included in the proceedings for this III Congress. McConkey had attended the Second Meeting and would attend the Fourth Congress in Wales.

A decision was made at this Congress to invite participants from other countries and to change the name to International Congress, as had been discussed during the Second Meeting. Limitation on attendance was a point of much discussion at this Congress as was consideration of the term *international*, "especially in reference to



Photographed at the III Congress are: Dr. F. T. Wahlen, Second (Vice) President of the II Congress, Dr. A. Elofson, Past President of the Second Meeting, Professor F. Falke, Past President of the First Meeting, and Dr. R. Geith, Permanent Secretary. (Picture provided by Peter Edling.)

the Grassland Congress Association which was about to be founded. Finally, the point of view, held particularly by the Swiss, prevailed and the new organization became known as the International Grassland Congress Association" (Cardon, 1952).

The Association "was established as the sponsoring organization for successive Congresses. Leipzig became the permanent seat of the Association's central office, in appreciation of Professor Falke's pioneering grassland work and in recognition of his having been one of the founders of the Congress. Dr. R Geith, then Professor Falke's assistant, was elected permanent

secretary of the Association" (Cardon, 1952).

"By provision of the bylaws of the Association, the Executive Committee was composed of the President of the next succeeding Congress, who became also President of the Association; the outgoing President of the Congress; past Presidents; and the permanent Secretary (<u>Appendix Table 0-1</u>). The Executive Committee of the Fourth Congress, held in Great Britain in 1937, consisted of Professor George Stapledon, Great Britain, President; the three past Presidents – Dr. Volkart of Switzerland, Dr. Elofson of Sweden, and Professor Falke of Germany; and Dr. Geith, the permanent Secretary" (Cardon, 1952). Thus, in 1937, 10 years after the meeting in Leipzig, these founders of the Congress remained actively involved.

The Fourth Congress, Aberystwyth, Wales - 1937

The Fourth Congress was held in Wales at Aberystwyth, 14 to 17 July, 1937. R. G.



Professor Reginald George Stapledon, President of the Fourth Congress. (From the archives of the Stapledon Memorial Trust.)

Stapledon (<u>Appendix A-4</u>) was President of this Congress and also President of the International Grassland Congress Association according to the new Statutes of the Association. At the time of the meeting, Stapledon was Professor and Head of the Agricultural Botany Department, University College of Wales, Aberystwyth, and Director of the Welsh Plant Breeding Station, Aberystwyth (the first person appointed to this position). Under his leadership, research on grasses and clovers carried out there had attained international recognition.

This Congress carried forward the name of International Grassland Congress Association and was the first truly international meeting with attendees from beyond Europe and the British

Dominions. "There were some 365 participants from 37 countries; all 11 regions of the world, as later defined by the Constitution of the International Grassland Congress (1977), were represented, with the exception of the Middle East" (Humphreys, 1997). Thus, the decision to embrace the concept of a truly international Congress made at the III Congress in Switzerland came into being at this Fourth Congress.

This was the first Congress to have participation from the USA. P. V. Cardon was chair of the U.S. Delegation. Dr. Cardon presented a Plenary Paper on *Plant Breeding in Relation to Pasture Improvement*. Dr. Anders Elofson (Sweden) and Dr. Richard Geith (Germany) also participated in the Congress. Dr. Geith presented a paper entitled, *The Improvement of the Norms used for the Determination of a Pasture's Yield of Animal Products*. Professor Dr. Volkart (Switzerland) and Geheimrat⁷ Falke (Turkey) were acknowledged as "non-participating members of the Fourth Congress." Also present was Güterdirektor Karl Schneider-Kleeberg, one of the original four founders of the Congress. His paper presented in Section 4. *MANURES AND FERTILIZERS, SOIL ASPECTS OF GRASSLAND* was on *Practical Considerations on the Profitability of Employing Nitrogenous Fertilizers on Pastures*. He died on 18 October 1937, two months after this Congress took place.

President Stapledon opened the meeting saying, "Greenness is the subject of my address, for grass is greener and more variedly and more vitally green than anything

⁷ Geheimrat, a non-academic, old German noble title bestowed on important, trusted, and reliable individuals (page xv).

in the whole wide world, and green is the vital colour. Young succulent grass is the prince of feeds. Over an enormous area of the world grass is the foundation of the agricultural industry, and perhaps almost everywhere it should be the foundation" (Appendix C-4; Stapledon, 1937).

Dr. Geith, Germany, was re-elected as Organizer of the Central Office (in Leipzig) in charge of the affairs of the International Grassland Congress Association. He stated: "The aim of the Association is to promote the interchange of scientific and practical experience between grassland experts. The steady increase in the number of persons taking part in the Congresses is a clear indication that a need for such interchange exists. The number of the Association's members was 71 at the beginning of the Fourth Congress and has in the meantime risen to 100. Some of the members are individual members, but there are also various Grassland Associations, Institutes and agricultural organizations which have become corporate members (<u>Appendix L, page 335</u>).

"It has always been the particular object of the Central Office to maintain an interchange of experience between the successive Congresses also, with a view to making their work still more fruitful. It has not yet been entirely successful in obtaining so large a measure of co-operation as appears desirable, and Dr. Geith therefore appealed to the members present to support him with their active collaboration. In the autumn of 1935, the Leipzig Office and the Secretaries of the Fourth Congress set on foot preparations for the present Congress. Thanks to the happy relations with the British Office, any difficulties that arose were easily removed, and the successful organization of the Fourth Congress was brought to completion.

"Provision for carrying on the work has been made possible through the generosity and contributions of the members of the International Grassland Congress Association up to the present. For this reason, a modification of the Congress fees was obtained for them in the present instance, and the Central Office in Leipzig was further enabled to contribute a sum of £70 towards the printing expenses of the Congress by purchasing a large number of its publications. The lightening of the heavy work incurred in the preparation and financing of the Congresses by the countries entertaining them will continue to be regarded as a duty by the Central Office. It is not alone the exchange of literature, which will be of importance in the future, but also the interchange of experience through personal visits, where in the Central Office I prepared to afford the members of the Association every assistance" (Geith, 1937).

Dr. van Daalen (Holland) declared the Association's accounts "to be in perfect order, as attested by an official auditor's and by my own examination." He further stated that, "having convinced himself that the Central Office in Leipzig was able to employ

the Association's funds for any Congress business incurred outside Germany, he had no objection to leaving those funds banked in Germany" (van Daalen, 1937).

At the beginning of the Fourth Congress Business Meeting, D. S. Huizinga (The Netherlands) presented an invitation from the Dutch Government to hold the next Congress in that country. The invitation was accepted with thanks and it was resolved to hold the Fifth Congress in Holland in the year 1940. The exact time and place would be made known later. Dr. Huizinga was elected President of the Fifth Congress.

At the end of the same business meeting, Count Teleki, as President of the Hungarian Grassland Association, confirmed an invitation, already sent to the Association in writing, to hold the Sixth International Congress in Hungary in 1943. This invitation was received gratefully with the decision of locality to be announced at the Fifth Congress.

Because of World War II, neither of these Congresses took place as scheduled.

At the Final Business Meeting, Dr. O. McConkey (Canada) suggested setting up a working committee on the nutritional value of grassland crops compared with other crops, suggesting that it would lead to an International Unit for interpretation of grassland yields, advance grassland improvement, and lead to placing crop production on a basis of Food Value. "We must endeavor to put forage crop production on a basis of feeding value," he said.

Also, at the Final Business Meeting, the following message from Professor Volkart was read: "Professor Volkart, as President of the last Congress, wishes me to express his great disappointment at not being able to be with you during our meeting in Great Britain. Unfortunately, his lecturing term only closes towards the end of July, and as there were a number of examinations pending, he could not possibly leave Zürich. He is particularly sorry to have missed this opportunity of seeing Aberystwyth and the splendid work carried on there by Professor Stapledon and his enthusiastic staff of co-workers." President Stapledon closed the meeting thanking all who had cooperated. He expressed the hope that all scientists and technicians interested in the promotion of grassland research would become members of the International Grassland Congress Association.

The Second World War (1939 to 1945)

"Between the Fourth and Fifth Congresses violent international strife disrupted the International Grassland Congress Association as it disrupted many another international organization with high purpose. The Netherlands, under the circumstances, was unable to be the host country in 1940, and it was not possible before 1947 to resume planning for the Fifth Congress. Despite these difficulties, however, and in the face of very trying circumstances incident to her period of recovery from war, the Netherlands in 1949 convened the Fifth Congress at Noordwijk and, in a highly commendable manner, again set in motion this vehicle for international cooperation in grassland improvement" (Cardon, 1952).

The Fifth Congress, Noordwijk, Netherlands - 1949

The Fifth Congress, 22 to 26 June, 1949, was held four years after the Second World



Dr. Derk Siewert Huizinga, President of the Fifth Congress. (From the archives of Wageningen University and Research.) War and 12 years after the previous Congress in Aberystwyth where Dr. D. S. Huizinga had first issued an invitation for the Congress to meet in the Netherlands. Dr. Huizinga (<u>Appendix A-5</u>) was President of this Fifth Congress, and Dr. C. K. van Daalen was Secretary. The site selected was deliberately a seaside resort. "Dutch people … like the sea and the rivers and the lakes. The sea stimulates people to look at things of this world from a wide point of view, makes them forget the small troubles of life and acquiesce" (Huizinga, 1949).

In his Inaugural Address (<u>Appendix C-5</u>), His Excellency S. L. Mansholt, Minister of Agriculture, Food and Fisheries, made reference to the impact of the war on the grasslands of the Netherlands: "During the war and also in the first

few years after the war, our grasslands have been suffering from inadequate supplies of manure. More serious, however, was the direct damage caused by violence and evacuation, leading to devastation or dilapidation of farms, but the greatest harm was done by inundations. Over 10 per cent of the cultivated area in the Netherlands has been flooded, one-third of this by salt water. "About 60,000 ha of grassland had to be sown down again, or at least to be restored by seeding in the old sod. I am not quoting these figures as an excuse that there are still grasslands which have not yet completely recovered, but I quote them because I am proud that we have already succeeded in obliterating the traces of war to such an extent" (Mansholt, 1949).

Other impacts of the war included the loss of the Association's monies. President D. S. Huizinga informed the Congress participants that the money, which amounted to about 1780 German Reichsmark⁸ was in Austria and that several attempts by western European countries to obtain it had failed. The funds were never recovered.

A further loss to the Congress was the death of Richard Geith (<u>Appendix A-6</u>). Dr. Geith had been called up for military service during the early years of the war and was killed on 10 March 1945, near Budapest, Hungary, about two months before the end of the war.

⁸ The value of the money lost was approximately 425 US\$ at the time of the Fifth Congress.

It was at this Fifth Congress that the *International Grassland Congress Association* was formally disbanded, and the *International Grassland Congress* became the official

name that has continued to the present time. This was, however, not without later debate. The President asked the Congress to express its opinion on the re-establishment of the International Grassland Congress Association, adding that it was not necessary for this Association to exist in order to arrange International Congresses. Dr. William Davies (UK) suggested that the position would be clearer if the Congress decided to disband the existing International Grassland Congress Association and start afresh. This motion was carried. It was then resolved not to re-establish the International Grassland Congress Association. It was further resolved that the next Congress should be on a world-wide basis. Dr. W. H. Myers (USA) suggested that the presence of a grassland association in a country should not be a condition of participation in the next International



Dr. William Davies, United Kingdom. [Adapted from Wilkins et al,. (2009)].

Congress. It was further stated that national and European Congresses would not interfere with the international congresses. Mr. E. Bruce Levy (New Zealand) "urged that each country should form a grassland association in addition to any existing zonal associations."

President Huizinga stated that several countries already had national organizations and it was anticipated that other countries would follow this approach. President Huizinga further proposed that a European Grassland Association should be established and appointed a committee to consider the matter. The committee subsequently reported that while it was important to organize regular meetings of experts to exchange scientific and practical experience, they did not consider it advisable to found a European Grassland Association for this purpose. The committee did recommend a small committee composed of a representative of each of the European countries to maintain contact with the Secretary. Meetings of these representatives (to be called *Meetings of the European Committee of Grassland Research*) should finally lead to collaboration in grassland research. The Congress adopted this proposal.

In the Business Meeting, the possibility of the USA as the next venue for the Congress was discussed. The meeting then elected Dr. P. V. Cardon (USA) as Temporary Chairman and Dr. O. S. Aamodt (USA) as Temporary Secretary of the Sixth Congress.

The Congress Leaves Europe

The Sixth Congress, Pennsylvania State College, Pennsylvania, USA – 1952

The Sixth Congress, 18 to 23 August, 1952, was the first held outside of Europe where



Dr. Philip Vincent Cardon, President of the Sixth Congress. Image dated 1949. (From the Instituto de Elaboracion de Vacuna e Investigacion de la Fiebre Aftosa, Palo Alto, Distrito Federal, Mexico.) (Provided by Special Collections, National Agricultural Library, Beltsville, Maryland, USA.)

it had all begun. Dr. P. V. Cardon, President of the Congress, opened the meeting saying, "We are assembled here for a single purpose. It can be stated in four simple words: More and better grass.

"But why should representatives of forty-odd nations come together to discuss more and better grass? International conferences and congresses these days are expected to deal with giant issues, issues that threaten to blight the hope of confused humanity - hope for peace, security, and economic stability. Why, I repeat, should this Congress focus its attention on grass?" (Cardon, 1952).

Peace by the Grass Route

"My answer to that question can be as simply stated as our purpose. But not in four words. We, too, seek to promote the security of nations, their economic stability, and the welfare of all their people. But our approach to these cherished goals is the grass route.

"Achievement of those goals cannot result from violent measures. Such measures manifestly are destructive of the very objectives they would

attain. The surer measures, we hold, are peaceful, cooperative measures by which no nation stands to lose, by which all nations may prosper. These measures aim at no conquest other than the conquest of factors inimical to soil conservation and sustained productivity of the soil. These measures aim at the subjugation of no people. Rather they seek only to subjugate by exact knowledge the natural obstacles that impede human progress toward a more abundant life.

"To conserve the soil we live by, to sustain its productivity, and to devise improved practices whereby our soil may, at the same time, produce in proportion to its full potential- these objectives are irreducible and must in the long run be reached. By no other means now apparent can the world permanently have its food and fiber in sufficient quantity, quality, and variety to keep abreast of the steadily increasing and evermore urgent demands of an expanding population. It is in full support of these great and necessary objectives that our concept of grassland agriculture is developing" (Cardon, 1952).

The Honorable Charles F. Brannan, Secretary of Agriculture of the United States, addressed the delegates saying, "It is my very great privilege to bring you the greetings of President Truman and to extend to you his warm wishes for a most successful and fruitful Grassland Congress. The United States is happy indeed to join with other countries of the world in full and free exchange of technical experience and knowledge directed toward agricultural improvement and particularly to the work of making nutritious and useful grass grow in ever greater abundance for the benefit of the world's people" (Appendix C-6; Brannan, 1952).

The Honorable John S. Fine welcomed the Congress to the Commonwealth of Pennsylvania saying, "Your mission in this Sixth International Grassland Congress is one of great importance. Your objectives are directed toward the welfare of humanity. We need today to be greatly concerned about food. Abundant food helps to assure peace. Lack of sufficient food breeds discontent and fanaticism, even war. Then, too, lack of food or ability to produce food creates acceptance of strange doctrines, and too often the placement of men with warped minds into positions of great power.

"This has been experienced all through the ages. Most of us here today have seen it happen within our own lifetime. But with the help of farsighted individuals such as are in attendance at this important worldwide conference, we may hope for the strengthening of peace aims" (Fine, 1952).

President Cardon informed the delegates that "Dr. Elofson, the only surviving founder of the Congress,⁹ had hoped to be with us today, but circumstances are keeping him in Uppsala. Believing that it would be appropriate, and anticipating your full concurrence, we have sent him greetings on behalf of the Sixth Congress. This message, I am sure, will be appreciated as a token of our esteem." A message of greetings and wishes of success for the Congress was received from Dr. D. S. Huizinga, President of the Fifth Congress.

Lionel Corkill, head of the New Zealand delegation, conveyed the invitation to hold the next Congress in New Zealand. J. Banerji, head of the India delegation, moved the invitation be accepted saying, "Chairman and Gentlemen, you know the last few Grassland Congresses were held in Europe and America. All the scientists of these

⁹ Of the four founders, Schneider-Kleeberg died in 1937, Falke died in 1948, Volkart died in 1951, and Elofson survived until 1957.

countries have done a tremendous amount of work on the subject and they are constantly in touch with what is going on in all parts of the world. There is in the fitness of things that now after five Congresses have been held in Europe and (one in) America that this daughter of Europe goes to New Zealand and it is farther away from the home where she was born." The motion was seconded by W. A. Minor (USA) and was passed. Thus, the invitation was accepted, and the Seventh Congress would move to New Zealand.

It was at this Sixth Congress in Pennsylvania that organizational structure was recognized as a growing need. *Rules of Procedure* were developed, and the first order of business in the Business Meeting was an explanation of these Rules by President Cardon. These procedural rules were adopted (<u>Appendix F-1</u>).

Also, during the Business Meeting, Dr. van Daalen (Netherlands) again stressed the need for a European Grassland Congress and for regional Congresses or conferences being linked with International Congresses. The *European Grassland Federation* was formed 11 years later in 1963 and celebrated its 50-year history in 2013 (Prins and Kessler, 2014).

At this first Congress outside of Europe, several different languages were spoken. To aid in communication, the Congress needed a tri-lingual glossary of scientific and agricultural terms so that professional State Department interpreters could become familiar with terminology used by participants. At the time, Henry Fribourg was a graduate student at Iowa State University, and he was asked by W. R. Chapline, Secretary of the Organizing Committee for the Sixth Congress, to be an interpreter for the Congress and to come to Washington in advance to create the glossary.

Fribourg was ideally suited for this. Born in France, he and his family had escaped just before France fell and the frontiers closed during World War II (Fribourg, 2003). Henry was fluent in his native French and also spoke some German. They arrived in Havana where Henry attended school and soon became fluent in Spanish. By 1952, he had added English to his language skill and had emigrated to the USA where he entered Graduate School: "Upon my arrival in DC, my life was taken over by the head of interpreters for the State Department, a booming-voiced Hungarian named Edmund Glenn, who was fluent in seven languages. I received training in both simultaneous and consecutive interpreting, though not enough in simultaneous to be really competent. But there is quite an art in consecutive interpreting, usually one paragraph at a time, and how to take notes in either language to be receptive and fluent. So, I eventually interpreted (oral) and translated (written) from English to both French and Spanish, and various combinations of the languages.

"At the conclusion of the meeting at State College, there was a 3-week tour of the western US to learn about its pastures and ranges, and grazing herbivores, both

domesticated and wild. The group of 75 scientists slept in Pullman cars that traveled at night, and then each day mounted into three buses to do the visiting and learning. I was the only interpreter, and also had to satisfy Portuguese speakers from Portugal and Brazil, a few Scandinavians and Germans, and a sprinkling of Asiatics. Additionally, Latin was the language used for naming the forages discussed. It was a challenge!" (Henry Fribourg, Personal Communication).

The Seventh Congress, Palmerston North, New Zealand - 1956

The Seventh Congress, the first held in New Zealand, was at Palmerston North from 6



Sir Enoch Bruce Levy, Chairman of the Seventh Organizing Committee. (From Galbreath, 2000.)

Farmers of New Zealand.

to 15 November, 1956. Sir Bruce Levy was President. Two-hundred, eighty-seven delegates representing 36 countries attended. On a motion from William Davies (United Kingdom), greetings were sent from those present at this Seventh Congress to A. Elofson (Sweden), Sir George Stapledon (UK), C. K. Van Daalen (Netherlands), and P. V. Cardon (USA), representing the Second, Fourth, Fifth, and Sixth Congresses, respectively.

Members of the official party represented the New Zealand Government, the Palmerston North City Council, the New Zealand Grassland Association, Massey Agricultural College, the Department of Agriculture, the Department of Scientific and Industrial Research, the University of New Zealand, the Royal Agricultural Society of New Zealand, and Federated

Sir Bruce Levy,¹⁰ Chairman of the Organizing Committee, began the Congress by stating, "This congress is greatly honored by the presence of His Excellency the Governor-General of New Zealand, Sir Willoughby Norrie, and Lady Norrie, and is highly appreciative that His Excellency deemed this occasion of sufficient national and international importance to agree to give the official opening address" (Appendix <u>C-7</u>).

In his opening address, Sir Willoughby acknowledged that the large number of scientists from the many countries represented proved that tremendous interest had been taken in grassland, and the holding of this congress in Palmerston North was a well-deserved compliment to the Manawatua and to New Zealand as a whole. He stated, "We are fortunate here in enjoying a wonderful climate and a prolific rainfall. That certainly has helped us and continues to help us. In this country we live by grass and if we can increase its growth on the farms, we increase our national prosperity."

Sir Willoughby described the history of the use of natural grassland down through the ages as one of exploitation, under which there was no science and little art. Thus,

¹⁰ Bruce Levy founded the Grasslands Division of the Department of Scientific and Industrial Research in New Zealand and served as Director until his retirement in 1951. He is known internationally for helping farmers all over New Zealand to improve their pastures based on techniques used in Europe, thus, raising pastoral agriculture in New Zealand to its dominant place.

grassland was almost always struggling, and often failed to survive. As grassland deteriorated, there was a steady increase in the world's population of both people and grazing animals. More recently, there was realization that grassland warranted consideration if it were to survive and produce. Out of this came the science of grassland farming, a science that is one of the youngest sciences. Sir Willoughby stated that Grassland Science had made great strides in many parts of the world, but the desert and semi-desert areas, the extremely cold areas, and the vast areas of good but unimproved natural grassland still stood as challenges to scientists. He reminded the audience that science itself would not improve grassland. Results of the scientists' work had to be carried to those practicing the art of grassland farming. "Grassland progress throughout the world depended partly on the scientist, partly on the adviser and partly on the practitioner, but very largely on the practitioner" (Norrie, 1956).

In the Prime Minister's Address, the Rt. Hon. S. G. Holland informed Congress members that "If we stop growing grass on the land, the grass will be growing in the streets but there is no danger of that. Much of the land that had been out of bounds to wheeled implements, yet was rich in prospects, had been brought into use by engineers who had designed special equipment to load and spread fertilizer from aircraft" (Holland, 1956).

"In the last 55 years, the area in pasture had increased by 7 per cent, but its carrying capacity had increased by 90 per cent for dairy cattle and 75 per cent for sheep. In 1949-55, the cattle population had increased by 1,000,000 and the sheep population by more than 7,000,000" (Holland, 1956). Mr. Holland reminded the group that "science had been a great influence in attainment of these increases, but one should not forget the hard-working farmers and their wives of earlier times who had none of the modern equipment to help them and yet had done so much" (Holland, 1956).

In his Chairman's Address, Sir Bruce Levy remarked, "We are gathered here at head of nation level, at head of State level, at University level, at the highest agricultural level, and at world scientific level to honour world grasslands themselves, and this is not too great an honour to bestow upon the grasslands of the world. They stand 'twixt a world of plenty and a world of famine; between a land surface of green oases and a land of desert; between surface soil stability and accelerated erosion" (Levy, 1956).

During the Business Meetings, the need for a mechanism for continuing responsibilities between Congresses was recognized and discussed. A committee composed of T. M. Stevenson, (chair; Canada), A. Jantti (Finland), and W. M. Myers (USA) was appointed to study the problem and to present recommendations to the next Congress. A second challenge was the need for a permanent Secretariat. Dr. Geith had filled this position during the first four meetings as Secretary but there had been no permanent position since that time. It was discussed that the FAO might be able to

fill this need. William Davies reminded the group that this had been discussed in the Netherlands Congress where it was decided not to enlist assistance from FAO. He suggested this attitude be maintained and that the Commonwealth Agricultural Bureaux could be a suitable organization.

At the Last Business Meeting, Sir Bruce Levy reported that greetings had been received from Dr. Elofson, Dr. van Daalen, and Sir George Stapledon. He stated, "It must be a source of great delight to Dr. Elofson and maybe to the late Professor Falke to see their initial efforts at grassland co-operation spread to this land at the uttermost outpost of the earth" (Levy, 1956).

The Eighth Congress, Reading, England - 1960

The Eighth Congress was held in Reading, UK, 11 to 21 July, 1960. Dr. H. G. Sanders



Prince Philip, Duke of Edinburgh, President of the Eighth International Grassland Congress. (Source: https://www.britannica.com/biograp hy/Philip-duke-of-Edinburgh)

(UK), Chairman of the Congress Executive Committee,¹¹ assumed the Congress Chair. Messages of Greetings were sent from the Congress to Sir George Stapledon of the UK, Dr. P. V. Cardon of the United States, and to Sir Bruce Levy of New Zealand, all Past Presidents of Congresses. This Congress was the first attended by Professor Ross Humphreys (Australia) who would later document so much of the history of the International Grassland Congresses (Humphreys, 1997, 2001, 2005).

Opening the Congress, H.R.H. Prince Philip, Duke of Edinburgh, President of the Congress, stated: "My first and very pleasant duty as President of the VIII International Grassland Congress is to offer a very warm and friendly welcome to all the delegates who have come from abroad. There are 600 Members and 110 Associate Members and 300 Day Members; over 500 of these have come from 52 overseas countries.

They seem to have managed to find the time, and I hope they managed to find someone else to provide the money, to attend this Congress. This very widespread interest in the latest developments in the science and practice of grassland management is most encouraging and I have no doubt at all that what you are going to see and hear between now and the 21st of July will amply justify your long journeys.

"I can only imagine that the rather late scientific interest in grassland husbandry is due to the fact that grazing is the oldest and probably the simplest and most primitive form of agriculture. Grazing in the primitive sense needs no machinery or instruments of any kind, while even the simplest form of crop production needs a whole series of tools which later developed naturally into machines. I think it would also be true to say that grassland investigation demands the use of the widest range of scientific techniques. Climatology and microbial biochemistry, soil physics and plant genetics, to mention only a fraction of the departments involved, have all to be integrated with the findings of animal and plant physiology. It is perhaps not surprising therefore that grassland husbandry has only had the full attention of

¹¹ Note: This was not the Executive Committee, formed at the Final Business Meeting of this Congress to fill the need for a 'continuing organization' between Congresses.

science during the last 50 years. In fact it is probably the combination of the development of scientific techniques with the growing need to farm more intensively that has been responsible for the relatively recent revolution in grassland management" (Appendix C-8).

Papers were presented by delegates on 12 to 15 and 18 to 20, July. In addition, there were pre-Congress tours and technical visits to Research Stations, Reading University, and the National Agricultural Advisory Service facilities during afternoons of the main Congress period and over the weekend. Local Farmers and local Congress delegates invited delegates to spend part of the Sunday as their guests either individually or in small groups. This innovation of the Congress was taken up by many delegates and was a great success. There was also a program for Accompanying Persons and optional cultural visits.

The opening session of the Business Meeting was chaired by Dr. H. G. Sanders. Dr. William Davies (UK) had proposed, as suggested by the President, that Dr. Sanders should be asked to take the Chair when the President was unable to be present. The proposal was accepted unanimously. The Rules of Procedure were approved with the exception of deferring a decision on the question of setting up a continuing organization until the Final Business meeting to allow time for consideration of the proposals put forward.

During the previous meeting in New Zealand, a committee, chaired by T. M. Stevenson, had been appointed to study the problem of providing for a continuing organization. Their report (submitted on 1 November, 1959) recommended the formation of an Executive Committee, the members of which would represent (one each) the following geographic areas: 1) The United States and Canada; 2) Latin America; 3) Australia and New Zealand; 4) Southeast Asia; 5) East Asia; 6) Mediterranean Area; 7) Europe (not including the Mediterranean Area); and, 8) Africa (not including the Mediterranean Area); and, 9) the President of the immediately preceding Congress. The Regional Representatives would be elected by the leaders of delegations in attendance at the Congress, and the Executive Committee would elect a chair from within its membership. Two additional proposals were before the Congress for discussion as well.

At the Final Business Meeting, the Stevenson Proposal was discussed as well as the two additional proposals that had been put forward. Professor G. O. Mott (USA) "felt that the proposal of the Stevenson Committee, which had been more widely considered and discussed than the other two proposals, should be adopted, but that the name Executive Committee might be altered to remove any suggestion that it would function in other than an advisory capacity." After much discussion, the proposal to set up a continuing organization, as suggested by Dr. Stevenson's

Committee, was carried by 84 to 75 votes. Members of this first Executive Committee were then elected by ballot (<u>Appendix Table O-2a</u>).

At the final session of the Congress, Professor I. V. Larin presented to the University of Reading a series of maps and descriptive books of the vegetation and grasslands of the Soviet Union. The presentation was in appreciation of the friendly welcome the members of his delegation had received during their time in Reading. Sir John Wolfenden, Vice Chancellor of the University of Reading, assured Professor Larin that "these maps and books would hold an honoured place in the University Library, as a symbol and token of all that the Congress had stood for in the cementing of friendly understanding between grassland workers from many countries."

The Ninth Congress, São Paulo, São Paulo, Brazil - 1965

The Ninth Congress was held in the city of São Paulo, Brazil, 7 to 20 January 1965. The



Marechal Humberto de Alencar Castelo Branco, President of Brazil, and President of the Ninth International Grassland Congress. [Photo provided by Sila Carneiro da Silva (Brazil).]

city of São Paulo is in the Southeast Region of Brazil in the state of São Paulo. Seven-hundred and eighty-three participants, between full members and day members, and 61 Associate Members "pursued with great interest the realization of this Congress" held for the first time in the Tropics. A total of 318 papers were presented. "The publication of the Proceedings of the IX International Grassland Congress records а new phase of comprehension of the problems related to the rational use of the grazing areas of different regions of the world" Martins, Chairman of the Publications (Zoraide Committee). The Congress included three types of organized tours: pre-Congress, post-Congress and sidetours.

The Business meeting, held on 7 January at 1430 h, was opened by Dr. Antônio José Rodrigues Filho, Secretary of

Agriculture of the State of São Paulo. He welcomed Congress members wishing them success for the Conference. Congress members were then asked to appoint names for the Presidency and Vice-Presidency of the Congress. Professor Hugo de Almeida Leme (Brazilian Minister of Agriculture) and Mr. Manoel Xavier de Camargo, Technical Director of the Department of Animal Production of the Secretariat of Agriculture of São Paulo, were suggested by Mr. J. V. Malato-Beliz (Portugal) as President and Vice-President, respectively. "This proposal was acclaimed." However, in the absence of Professor H. de A. Leme, Mr. M. X. de Camargo assumed the Presidency. Rules of Procedure were presented and discussed. A moment of silence was observed "in honour of all dead researchers who have dedicated their lives to the studies of grasslands and forages." The "possibility of creating a Permanent Secretariat operating at FAO headquarters" was discussed.

Dr. R. M. Moore (Australia) and Dr. O. R. Jewiss (UK) "presented the excuses for the absence as well as the wishes for a successful Congress of Drs. J. G. Davies and W. Davies, respectively." In accordance to a suggestion of Mr. J. Rebischung (France), the Congress sent a cable to both brothers Davies "wishing them a speedy recovery." Invitations to host the XI International Grassland Congress were then presented by Dr. R. M. Moore (Australia), Prof. A. I. Tjutjunnikov (USSR), and Dr. H. A. Steppler (Canada), on behalf of their governments.

The Congress Opening Session, held 7 January at 2030 h, convened under the chairmanship of Professor Dr. Hugo de Almeida Leme, Minister of Agriculture, who was representing Marechal Humberto de Alencar Castelo Branco, President of Brazil.

Dr. Adhemar Pereira de Barros, Governor of the State of São Paulo, spoke "mentioning the importance of the large Brazilian herds and the extraordinary possibilities of the country in the field of food production of animal origin." He pointed out the need for better understanding among the technicians of the world for a common progress. Finally, he wished the Congress success in finding solutions for problems that would benefit the wellbeing of all the people.

Mr. Geraldo Leme da Rocha, Executive Secretary of the Congress, welcomed all



Dr. Geraldo Leme da Rocha, Executive Secretary of the Ninth Congress. [Photo provided by Sila Carneiro da Silva (Brazil).]

present and expressed great pleasure in Brazil having been the first tropical country to hold this world-wide convention: "We are, at this occasion, representing 49 countries congregated around the same objective which unites us into one and only nation. Science satisfies for an instant man's desire to gather together free of boundaries and gives the individual the impression of having reached the unity sought for. Yes, we are at the present time congress members from all parts of the world and within us our thoughts are directed to all humanity with its innumerable problems. Our sole purpose is to rationalize the availability of milk, meat and clothing so that they can be made accessible to all the people of the World.

"Never before has such a numerous and distinguished

group of scientists and research workers assembled in the tropics for the study of pastures.

"As Brazilians we are honored with the privilege of having you among us. We feel strongly that relationships will be established not only in the field of science; long-living friendships will originate from cultural interests which bind us to this convention" (Appendix C-9).

Dr. Ronald A. Peterson, Head of the Grassland and Forage Department of FAO in Rome, made reference to the purposes of the Congress and stated that "the choice of São Paulo as host city of the conference was due to the technical progress achieved, which has already been evident during the last congress." On behalf of the foreign delegations, he mentioned Brazilian hospitality as one of the attractions for the coming of many of the specialists inscribed at the Ninth International Grassland Congress. Indeed, this hospitality included "a basket with fresh Brazilian fruits and a bottle of wine" provided by the Instituto Agnonômico de Campinas to all participants at their hotels!

Professor Dr. Hugo de Almeida Leme, Minister of Agriculture, outlined challenges of agriculture and cattle raising in the Tropics as an abundance of green forage during



Dr. Hugo de Almeida Leme. Second Honorary Vice-President. [Photo provided by Sila Carneiro da Silva (Brazil).]

the wet season and the lack of that forage during the dry season. He pointed out that tropical grasses grow fast and are tall while there is a deficiency of leguminous forages. Nutrient deficiencies in the cattle herds contribute to low utilization (11%) of the forages. Other challenges include soils that are low in fertility and high in acidity, the unsolved problem of invasive plants, and breeders who are not acquainted with modern techniques.

He spoke of the importance of grasslands as "the basic element of economical cattle exploitation, as well as an element preserving the soil, recuperating exhausted soils, reducing the effects of erosion,

increasing the capacity of water retention, fixing temperatures and improving the nitrogen indeces (indices); these factors are of great importance to semi-arid regions, regions of lixiviated soils of low fertility and regions of humid soils located in the tropics and the subtropics where cattle breeding often is the sole advisable economical exploitation."

He continued, saying "...during the last 30 years significant advancement was achieved in the temperate zones, but the same has not occurred in the tropical and sub-tropical zones, of great possibilities if modern and adapted techniques are applied on them."

He closed the session by stating, "The greatest enemy of men is hunger, and the Ninth International Grassland Congress could establish directives for programs designing the survival of mankind," and for this he thanked the Congress as he considered it to be an altruistic task as well as a dedication towards the safeguard of civilization.

At the Final Business Meeting, Australia was announced as the venue for the XI International Grassland Congress. Dr. H. A. Steppler (Canada) and Professor J. Grossman (Brazil) presented names of persons nominated to replace retiring members of the Executive Committee (approved; <u>Appendix Table 0-2a</u>). It was suggested by this committee that the Chairman of this IX Congress be a member of the Continuing Committee to serve until the X Congress. A. R Filho (Brazil) assumed this position. This procedure of including on the Executive Committee a

representative from the previous Congress became a continuing feature (<u>Appendix</u> <u>Tables 0-2a</u>, <u>0-2b</u>, and <u>0-2c</u>).

The possibility of the FAO as a source of a permanent Secretary for the Executive Committee had been reviewed by this Committee as directed at the previous Congress. It was requested by Steppler and Grossman that the FAO be approached to accept this responsibility. Steppler and Grossman further recommended that the responsibilities of the Permanent Secretary be:

- 1. To serve as Secretary of the Continuing Committee.
- 2. To maintain up-to-date lists of all those interested in grassland studies, such lists to form the basis for invitations for Congress Committees of the host country.
- 3. To act as a clearinghouse for information during the period between Congresses.
- 4. To maintain appropriate permanent records as submitted to him by the Congress Committees.

These recommendations were approved "amidst cheers."

Dr. R. S. Campbell (USA), member of the Resolutions Committee, read the following **Resolution:**

- That the Executive Committee consider the entire structure of the International Grassland Congress organization, including the following specific points:
- 1. The feasibility of establishing a Permanent Secretariat to assure better continuity and efficiency of the organization.
- 2. The scope, character, duration, and dates of the Individual Congresses.
- 3. The practicability of establishing world zones or regions for the rotation of the congresses. For example, at the last Congress there was discussed the suitability of the Mediterranean area for a future Congress.
- 4. That the Executive Committee report progress on the substance of this resolution at the next Congress in Finland.

The motion was 'justified' by Professor G. A. Tomé (Argentina). Mr. J. L. Murguia (Uruguay) suggested that the Permanent Secretariat be patronized by an organization such as FAO. Other topics on this issue were discussed by Mr. W. T. Atkinson (Australia), Dr. H. A. Steppler (Canada) and Mr. J. Rebischung (France). "Finally, the motion was accepted with cheers."

An interesting note from this Congress was that the Jockey Club de São Paulo dedicated a horse race to all the Congress members on 11 January, 1965.

The X Congress, Helsinki, Finland - 1966

Helsinki, Finland, was the site of the X Congress from 7 to 16 July, 1966. Professor



Professor Pellervo Saarinen, President of the X Congress. (Photo by Foto Jatta, from archive of Valio.)

Pellervo Saarinen¹² was president of the Congress with Dr. William Davies (UK) and Professor Otto Valle Vice-Presidents. (Finland) serving as Opening Ceremonies of the Congress, preceded and concluded by orchestral and choral music, were held in the Main Auditorium of Helsinki University on 7 July. Attendance included 408 members representing 43 countries. Professor Jouko Vuorinen welcomed the Members of the Congress in the name of Dr. Urho Kekkonen, President of the Republic of Finland, who had agreed to act as Patron of the Congress. Dr. Vuorinen, on behalf of the Congress organizers, expressed great pleasure and gratitude that the Congress had been entrusted to Finland. This was a great honor (<u>Appendix C-10</u>).

Mr. N. Kaasalainen, Minister of Agriculture, also welcomed members of the Congress,

stating that "the country's aim was to achieve self-sufficiency in the supply of basic foodstuffs: this had already been achieved in most products. Grassland research in Finland should be intensified with the object of increasing yields per hectare, as well as improving the quality and efficiency of utilization. This might result in some over-production of animal products, but at present there seemed to be no alternative to dairy farming if the profitability of Finland's small farming units was to be improved."

Dr. William Davies, on behalf of the delegates, thanked the Government and people of Finland for inviting the Congress to meet in Helsinki, praising the excellence of the preparations. He



The Main Auditorium at the University of Helsinki where the Opening Session of the X International Grassland Congress was held.

spoke of the world's grassland, which he divided into "grasslands of humid climates,

¹² Pellervo Saarinen was President of Valio and Director General of the Agricultural Research Center, and Professor of Animal Science and Doctor of Agriculture and Forestry. He remained in office until his retirement in 1975. During Saarinen's tenure, the number of Valio dairies was halved from 318 to 161, and their operations were greatly improved. On his initiative, Valio began to make cottage cheese. He died on 7 October 2010, at the age of 100.

sub-arid grasslands, arid grasslands, desert areas." Dr. Davies complimented Finland for its approach to pasture problems in its "humid-climate grasslands," suggesting that developing countries should take note of what Finland has accomplished since 1930.

Dr. William Davies expressed concern that research was addressing the wrong problems in developing countries. He stressed that grassland improvement was the



Dr. Howard A. Steppler, Canada. (Provided by McGill University Archives: PRO13210. Photographer: Kenneth Bowe/McGill News.)

key to achieving better nutrition of farm animals to provide more and better foods for man and should be given top priority.

The Finland Congress was instrumental over the next several years as organizational structure for the IGC evolved. Rules of Procedure were accepted for conducting business during the Congress (<u>Appendix F-2</u>). During the First Business Meeting a committee was appointed, chaired by Dr. H. A. Steppler (Canada),¹³ "to study the functions of the Continuing [Executive] Committee." At that point, the committee was officially the "Executive Committee" (<u>page 28 to 29</u>; <u>Appendix Table 0-1</u>, and <u>Appendix Table 0-2a</u>).

Members of Dr. Steppler's Committee were H. van der Molen (Netherlands), R. M. Moore (Australia), K. W. Parker

(USA), R.A. Peterson (FAO), G.S. Puri (Ghana), T. Rabotnov (USSR), and W.F. Raymond (UK). Dr. Steppler presented his committee's report at the Final Business Meeting. Two other proposals were considered but the Steppler Report was accepted. Thus, the name was changed officially to the Continuing Committee of the International Grassland Congress, and the duties and responsibilities were outlined (<u>Appendix F-3</u>). In addition to the name change, key points included: 1) "That the chairman of the Continuing Committee be elected from its membership by the members of that committee at its first meeting"; 2) that it is the responsibility of the Continuing Committee to select and obtain the acceptance of the host country for each Congress; and, 3) that each member of the Continuing Committee would represent one of the eight Regions of the World, as outlined at the Eighth Congress in Reading, as follows: i. The United States and Canada; ii. Latin America and Caribbean; iii. Australia and New Zealand; iv. South-east Asia; v. East Asia; vi. Mediterranean area and Near East; vii. Europe (not including Region vi); and, viii. Africa (not including Region vi). These

¹³ Dr. Howard Steppler chaired the Committee to clarify responsibilities of the Executive Committee that ultimately led to renaming this as the Continuing Committee – the name that continues today.

Regions remained in effect until expanded to the current 11 Regions at the time of acceptance of the Constitution in 1977 (<u>Appendix F-4</u>).

The need for a permanent Secretary was again voiced with the recommendation to approach the FAO requesting provision of a permanent Secretary, specifically the Chief Pasture and Fodder Crops Branch. This remained unresolved.

It was also in Finland that the newly named *Continuing Committee of the International Grassland Congress* received suggestions that the name of the Congress be again changed. The Committee appreciated and considered the suggestions but could not find a more appropriate name for the Congress. Thus, the name *International Grassland Congress* remains to the present day.

The XI Congress, Surfers Paradise, Australia - 1970

The XI Congress (14 to 23 April, 1970) was the first held in Australia. Fifty-one



Dr. Edward Mark Hutton, President of the XI International Grassland Congress. (Photo from CSIRO, Australia.)

countries were represented by 896 attendees, 146 of whom were Associate Members. Dr. Mark Hutton,¹⁴ Chairman of the Organizing Committee and the elected President, welcomed the Congress members to Australia expressing his hope that would Congress members gain а better understanding of the country and its people as a result of their visit (Appendix C-11). Ross Humphreys remembers that "In April 1970, we came to Surfers Paradise and a really stimulating IGC. The plenary sessions partly emphasized fields where Australian strengths were evident: plant introduction, plant nutrition and legume biology. A procedural innovation for some Australian papers

was to have these d, to give more time for

summarized and not presented, to give more time for discussion" (Humphreys, 2019).

The Opening Ceremony began with comments by Mr. Walter Ives, Secretary of the Department of Primary Industry of the Commonwealth of Australia. Mr. Ives pointed out that 60% of Australia's grassland lay in the northern zone of summer rainfall. He emphasized the recent and spectacular advances in animal production generated by development of tropical pasture legumes and that this untapped potential remained enormous and held much significance for research for other tropical countries. He drew attention to the fact that people of many countries face protein deficiency, and he expressed the view that increased animal production obtained by



Attendance badge worn by Dr. Bob Clements, a member of the New Zealand delegation. The postage stamps were released especially for the occasion of this Congress. (Provided by Dr. Clements.)

grazing standing pasture could hopefully provide a better prospect of alleviating this source of malnutrition. This was reason enough, he said, to encourage further work on grassland problems (Ives, 1970).

¹⁴ Dr. Hutton developed 'Siratro,' the first commercial cultivar of *Macroptilium atropurpureum*.

Mr. Ives paid special tribute to the late Dr. John 'Jack' Griffiths Davies¹⁵, whose



Dr. John ('Jack') Griffiths Davies (Source: CSIRO Division of Tropical Crops and Pastures, Australia.)

outstanding work and inspiring research leadership was a major force behind the Australian pasture revolution, particularly that currently taking place in the tropics and sub-tropics of Australia. His work had world-wide recognition and it was largely a result of his efforts that this Congress was held in Australia. During the Opening Business Meeting, members stood in silence as a mark of respect for the following prominent grassland scientists deceased since the last Congress: Dr. J. Griffiths Davies (Australia), Dr. William Davies (UK), Professor August Jantii (Finland), and Dr. Otto Valle (Finland).

A book, Australian Grasslands (Moore, 1970), was

prepared at the request of the Organizing Committee for this first Australian

Congress. This book, dedicated to Jack Davies and edited by Milton Moore, covers the Australian environments, "all major grazing lands and pastures" in the entire country, and concludes with factors influencing productivity including "tropical and temperate pasture plants, and mineral nutrition." It was authored and co-authored by 35 of the most eminent Australian agricultural scientists of the time.

During the Business Meeting, the Continuing Committee Chairman, Dr. R. M. Moore, announced that changes of relevance to the Continuing Committee included the appointment of a non-voting Secretary (which



Australian Grasslands prepared

specifically for the XI Congress in Australia. (Photo provided by Bob Clements,

Australia.)

subsequently became Liaison Officer at the request of FAO) who is the Senior Officer of the Pasture and Forage Crops Group of FAO in Rome. Additionally, a member of the Committee was added to represent the immediate past host country.

At the Final Business Meeting, recommendations to committees charged with organizing future Congresses included: 1) "that a future Congress should include a major plenary session on the problems of over-population and land reform in relation

¹⁵ A member of the first Executive Committee, Dr. John 'Jack' Griffiths Davies (Australia) was founder and chief of the new Division of Tropical Pastures established in Brisbane. Born in Aberystwyth, he studied under Sir George Stapledon (<u>Appendix A-4</u>). His holistic, multidisciplinary approach to the soilplant-animal complex led to transforming the productivity and nature of millions of acres of grazing land in Australia.

to agricultural production; and, 2) that a considerable proportion of the world's land area in both temperate and tropical climates is arid and semi-arid. These areas are receiving increasing pressure to produce forage for livestock and wildlife, water for downstream needs, and services for man's enjoyment. Research effort into problems of arid and semi-arid lands is rapidly increasing, and a worldwide need exists to communicate the results of this research and of practical management. We therefore recommend that future Grassland Congresses contain contributed papers, discussions, and plenary sessions concerning this important area of the world's grasslands."

Concerns of increasing population pressures on grasslands were addressed in Recommendations to the Committees charged with organizing future Congresses: "We recommend that a future Congress should include a major plenary session on the problems of over-population and land reform in relation to agricultural production."

Two hundred and two Members and Associate Members took part in three pre- and three post-Congress tours that provided members opportunities to see Australian grasslands and associated industries. A mid-Congress tour to the Gold Coast hinterland was also provided. The three pre-Congress tours included: 1) the northern and coastal Queensland area through tropical and subtropical grasslands used for beef and dairy production; 2) the southern region through Mediterranean and temperate pastures, some of which are the most productive in Australia, and included Adelaide, Hamilton, Melbourne, Warragul, Shepparton, Albury, and Canberra; and, 3) the central and northern New South Wales area where grassland and mixed farming properties are used for sheep, beef and dairy production and included Sydney, Parramatta, Gosford, Maitland, Tamworth, Armidale, Glen Innes and Grafton. Post-Congress tours included: 1) the southern tour described above but in reverse; 2) the inland southeastern Queensland tour traveled through the Lockyer Valley, where vegetables and fodder crops are produced using irrigation. It then proceeded to the Darling Downs to see an important cereal and sheep-producing district. Extensive sheep-raising operations on native pastures in low-rainfall areas were also included. Toowoomba, Roma, Charleville, Blackall, Emerald and Gayndah were the main centers visited. The last tour covered the arid zone of Central and Northern Australia including Alice Springs, Katherine, Kununurra and Darwin, and the monsoon zone of the Northern Territory and Western Australia.

The XII Congress, Moscow, USSR - 1974

The XII IGC was held in Moscow, USSR, on 8 to 20 June, 1974. This was the first time



Dmitry Stepanovich Polyansky, Minister of Agriculture of the USSR

that the Congress convened in Region X. About 1,200 people attended (542 from abroad), representing 41 countries. Delegates were treated to an unforgettable Opening Ceremony featuring folk dances and costumes from around the entire USSR. Vice-Minister of Agriculture of the USSR, P. I. Morozov, was President of the Congress. Attendees were welcomed by D. Polyansky, Minister of Agriculture of the USSR (<u>Appendix C-12</u>). The Moscow Congress was the first to have a 'motto' or theme as referred to by following

Congresses (<u>Appendix G</u>). Minister Polyansky explained the motto saying, "The motto of our Congress is contained in the words: *Soil – plant – animal*

– *products of livestock breeding*. This means that the work of the Congress must promote the accomplishment of the noble goal of uniting science and practice, serve the interests of augmenting the productive forces of agriculture, and help to solve the universal human problem of raising the living standards of people in all countries of the world.

"Man cannot exist merely at the expense of the natural fertility of soil, cannot take everything from the land and give nothing in return. It is particularly important to bear this in mind now. According to tentative estimates, by the year 2000 the



Postage stamp commemorating the XII Congress in Moscow. (Provided by Inna Syrous, Russian Academy of Sciences.)



Commemorative pin from the XII Congress (Provided by Inna Syrous, Russian Academy of Sciences.)

population of the world will be nearly doubled reaching approximately 6000-7000 million (a projection that came true).

"I would like to express confidence that this XII International Congress will discuss all the achievements of science and practice in grassland cultivation in modern conditions and make a big new contribution to the expansion of scientific ties among scientists and specialists of different countries, to the cause of the further development of agriculture, of improving the welfare of people."

Papers were presented in Moscow on 12 to 14 and 17 to 19 June. A large number of tours and visits were included in the overall program. There were five post-Congress tours, many of which involved substantial travel within the USSR. In addition to



The Presidium at the Final Business Meeting in Moscow in 1974. (Photo by Dr. Ted Leafe.)

Russia, the tours included visits to Belarus, Estonia, and Latvia in the north and west of the USSR, Armenia, Georgia, and Ukraine in the south, and Kazakhstan, Kirghizia, and Uzbekistan in the east. In addition, there was a mid-Congress tour in the Moscow region and local tours, including Institutes, experiment farms, collective and state farms, and museums.

One of these tours included a memorable visit to the Williams Fodder Research Institute in Lobnya near Moscow. Founded in 1922, it is still among the foremost forage and soils research centers in Russia, now with the status of Federal Research Center. It is famous for its work on breeding alfalfa (*Medicago sativa*), particularly for tolerance to acid soils, and productivity of red clover (*Trifolium pratense*) as well as many



The Williams Fodder Research Institute visited during the XII Congress in Moscow. (Reference: <u>https://www.vniikormov.ru/ob-institute/napravlenijadejatelnosti.php</u>)
grasses, land reclamation, and animal nutrition. These tours were offered on the days when papers were being presented as well as on the weekend.

At this Congress, several Resolutions, including the following, were passed to 1) devote the next Congress to the mobilization of potentialities of natural forage grasslands in different regions of the world, 2) to study the question on the advisability of founding an International Grassland Organization, and 3) on the occasion of the 50-year anniversary of calling the I International Grassland Forum, the Congress resolves to hold the next XIII International Grassland Congress in Leipzig (German Democratic Republic) in 1977. This last Resolution precipitated conflict with the stated responsibilities of the Continuing Committee and emphasized the essentiality of an accepted Constitution with adherence to its policies and procedures (<u>Chapter 4</u>).

The Fiftieth Anniversary

"We have to realize that environment is not just the climate but it is the totality of the entire or holocoenatic system of nature which functions as the whole"

S. C. Pandeya, Chairman of the Continuing Committee, XII IGC, Leipzig, GDR, 1977 (Pandeya, 1977)

The Jubilee Congress

The XIII Congress, Leipzig, German Democratic Republic - 1977

The XIII Congress marked the Fiftieth Anniversary of the International Grassland



Vice Minister Reinhard Lemke (left), President of the Congress, Roger Wilkins (facing), and S. C. Pandeya, (right) Continuing Committee Chair, discussing the Jubilee Congress. (Provided by Roger Wilkins.) Congress and took place in Leipzig, German Democratic Republic on 18 to 27 May, 1977. This was almost exactly 50 years to the day after the Inaugural Meeting that occurred there on 21 through 31 May, with a meeting in Leipzig on 27 and 28 May, 1927.

Leipzig was still a center of agricultural education and training in the German Democratic Republic. Leipzig University was one of four universities, including the Institute for Tropical Agriculture, with studies in agriculture, and it had sections for Animal Husbandry and Veterinary Medicine.

The Congress was supported by the Ministry for Agriculture, Forestry, and Food, and mainly organized by the National Academy of Agricultural Sciences, represented by the

President, Vice Minister Reinhard Lemke, and the Vice President, Professor Dr. Eberhard Wojahn.

Prof. Dr. Helmut Thöns, previously Güterdirektor of the Academy's Experimental Farms and Director of the Academy's Institut für Futterproduktion (Institute for Fodder Production) Paulinenaue until his retirement in 1990, was the Secretary



Prof. Dr. Helmut Thöns, Secretary General of the Congress. From the Archives of Paulinenaue Institute, now ZALF, and Angelika Kellner, Germany.)

General and responsible for the technical organization. Together with Eberhard Wojahn, his predecessor as Director of the Paulinenaue Institute, he was also responsible for editing the congress documents and publications.

The Congress Motto was 50 Years Grassland Research for Intensive Forage Production (Appendix G). This meeting

was held at the Kongress Halle am Zoo, the Congress Center at the Leipzig Zoo. Over 1,000 delegates from 36 countries representing all the continents attended this meeting.

Three tours took place both before and after the Congress sessions. The tours were of 4-

days duration, and the different tours covered (i) lowlands in the north, (ii) the east, north, and central areas, and (iii) the central plain and low mountain ranges and forests to the south. Mid-Congress technical tours were offered on the Saturday of the Congress, and there were many day and half-day tours offered to participants



Professor Dr. Eberhard Wojahn, Vice President of the Congress. (From the Archives of Paulinenaue Institute, now ZALF.)



The Kongress Halle am Zoo where the 50th Anniversary of the IGC was held.

and accompanying persons in the cultural program.

In his opening remarks, Reinhard Lemke, President of the Congress, stated that "The International Grassland Congress is one of the most important events in agricultural sciences" (<u>Appendix C-13</u>). He went on to say that ever since the First Congress, it has "grown to a world-wide platform for international exchange of views and experience in the field of forage production." In closing, President Lemke stated, "May all the knowledge and experience pooled at the Congress

yield benefit to circles far beyond the delegates. May their widest possible dissemination and application help enhance forage production world-wide, as a basis

for more high-quality food of animal origin. May all these efforts turn out as a major contribution to fighting hunger in this world" (Lemke, 1977).

In line with the conference motto, Vice President Wojahn described the development of grassland productivity on intensively managed grasslands since the first conference 1927, when Falke stated, "Forage production is, on perennial as well as on annual arable forage cropland, in comparison with other procedures, underdeveloped. We should, however, promote this form of land use with all our power, ... as we have not paid attention enough so far to the perennial forage cropping areas." (Opening address to the Inaugural Congress, Appendix C-1, page 194). In intensive grassland production systems with adequate soil water regulation and fertilization, the yields of hay in northeast Germany, where Falke was working, increased from 3.6 tons per hectare in 1927 to 6.0 in the period 1971 to 1975.

This Congress provided great stimulus for grassland scientists and grassland research in the GDR. It provided an international platform for reporting and demonstrating their research. It also facilitated the development of contacts and exchange of ideas with scientists from, particularly, western countries that had been very limited at that time.

Present at this Congress was Dr. W. R. Chapline, 86 years old, who had attended the Fourth Congress in Aberystwyth, Wales. Dr. Chapline was retired from the United

States Forest Service and had attended all but three of the intervening Congresses. Не had served as Secretary of the Organizing Committee for the Sixth Congress in Pennsylvania. Dr. Chapline expressed appreciation for the excellent organization



A fly-over demonstration of aerial spreading of fertilizers during the Congress. (Photo provided by Roger Wilkins.)

of the Congress and wished every country represented continued success in bettering their grassland and related livestock production (Barnes, 1977).

To assist with communication among International Congress participants and to aid translators and Congress assistants, a Glossary of over 1,000 terms dealing with

grassland, forage production, and animal nutrition, available in five languages, was provided to the Delegates (<u>Appendix H</u>; for more information see <u>Chapter 6</u>). At the close of the Congress, the preparation of this Glossary was applauded, and it was recommended for further use by the Congress.

Professor S. C. Pandeya, Chair of the Continuing Committee, welcomed participants saying that the Golden Jubilee session was unique for three particular reasons. First, that "It was here in Leipzig, in the year 1927, that the International Grassland Congress was founded and its very first session held to promote the international exchange of scientific experience in the field of grassland management, and thus, by ways and means, the intensification of forage production to contribute to an everbetter nutrition of the growing world population." Secondly, that "it is again here at Leipzig that the first Constitution of the International Grassland Congress, as a body, is going to be assepted [*sic*], so that all future Congresses will have sound footing for their organization." And Third, "This session has one more novelty, and that is, this session is going to discuss ecological problems of grasslands from all regions of the world with climates varying from extremely hot deserts to tropical rangelands to temperate regions and tundras."

At the First Business Meeting, Professor Pandeya presented and explained the Draft Constitution of the International Grassland Congress (<u>Chapter 4</u>). The desirability of such a Constitution had already been discussed at the XII Congress in Moscow. Professor Pandeya stated that "the Constitution is to stipulate unambiguous rules to support those responsible in the preparation and actual implementation of future Congresses. That was the reason why the Draft Constitution had been prepared by the Continuing Committee of the International Grassland Congress following the XII Congress." The Draft had been previously circulated in the three working languages of the Congress. Each delegate was provided a copy. Professor Pandeya recommended immediate adoption. All delegates were asked to vote on the Draft Constitution, and the Draft was accepted unanimously and was immediately put into use as the basis of working principles by which to hold the XIII Congress (<u>Appendix</u> <u>F-4</u>).

Members at the Jubilee Congress expressed concerns regarding the resolution from the previous Congress in Moscow that had suggested further consideration of founding an International Grassland Organization. The concern was that there were "many considerations and aspects which did not favor setting up such an Organization at that time, but that grassland organizations should be established at national levels."

It was at this Congress that Robert F Barnes announced that the First International Rangeland Congress would be held in Denver, Colorado, in August of 1978. All were invited to attend. Dr. Barnes assured the delegates that "There is no intention and there will be no competition seen with this Congress, the International Grassland Congress. We whole-heartedly support and we will continue to advocate and support the International Grassland Congress."

Dr. Barnes continued, "...let me caution all of you that the real challenge lies ahead of us. I challenge the Continuing Committee to look to the future and chart a course of action for this body of dedicated grassland scientists, to move for the establishment of some form of an international range and pasture organization or association if that be decided the course that is needed. There is some aspect I feel that needs to coordinate some of the various grassland activities that are developing throughout the world and to avoid fragmentation that appears to be inevitable. Ladies and gentlemen, the challenges or rather the opportunities are before us. May we be equal to the task" (Barnes, 1977).



Delegates at demonstration during a tour at the XIII Congress. (Provided by Jürgen Pickert.)

"If the peoples of the world, and to a man, are indeed to be adequately fed with fresh food of the highest quality, and balanced in every respect, then the enormous acreage of the world that stands in grassland of every character, and of no character at all, must be brought to play its full part."

Professor R. G. Stapledon, President of the Fourth Congress, Aberystwyth, Wales (Stapledon, 1937)

Chapter 2 From Fifty Years Forward

The XIV Congress, Lexington, Kentucky, USA - 1981

The XIV Congress, co-hosted by the University of Kentucky and the American Forage



Dr. Robert F. Barnes, President of the XIV Congress. (Reprinted with permission of the Crop Science Society of America, Madison. Wisconsin. USA.)

and Grassland Council (AFGC), was held (15 to 24 June, 1981) on the University's campus in Lexington, Kentucky, USA. The theme of this Congress was *To Strengthen the Forage-Livestock Systems of the World*. Attendance included Full members (718), Associate members (185), Students (86), Day members (74), and Forage Producers Forum (113) for a total of 1,126 attendees. Full Members included 324 from the USA and 394 international members. They came from 59 countries and 47 of the 50 states in the USA.

This Congress encouraged delegates to see as much of Kentucky and the USA as possible during their stay. Two pre- and one post-Congress tours were conducted with a total of 185 people participating. Seven mid-congress tours, with 1,374 participants, featured commercial forage livestock systems throughout the state and a tour of surface mine reclamation sites. Weather challenged

these tours when a tornado hit Lexington with rain and strong winds. Power lines and

trees were downed. Busses returning to Lexington had to take detours to get delegates back to hotels. Fortunately, all arrived back safely.

The Congress opened with a proclamation by the Honorable John Y. Brown, Governor

of Kentucky, who designated June 1981 as Forage and Grassland Month in Kentucky. Dr. Walter Childers. Chairman of the Continuing Committee, welcomed all in attendance. He introduced the Continuing Committee members and Congress participants by a roll call of nations and areas of the world. William C. Templeton, President of AFGC, welcomed delegates and guests and reminded them that "As we are all so well aware, forages and grasslands are tremendously important in world



Planning the Kentucky Congress. From left, John Baylor, Orin Little, Jack Hiatt, Iwao Nikki, Robert F Barnes, and far right, William C. Templeton. (Reprinted with permission from the American Forage and Grassland Council.)

agriculture. Owing primarily to the complexities of producing and utilizing plants for animal feed, often under marginal conditions for growth, progress has been slower than in some other areas of agriculture. Improved communication and increased interaction among grassland scientists, educators, producers, and many other groups and organizations are required to exploit more fully the world's grassland resources in animal production."



Opening Session of the XIV Congress, Lexington, Kentucky, USA. (Provided by Dr. Garry Lacefield).

Charles E. Barnhart. Dean Director of the and University of Kentucky of Agriculture, College informed delegates that "Kentucky has traditionally been recognized as a leading grassland state. Almost 65% of the agricultural land is occupied by pastures, with additional acreages used for cropping of hays and silages." He further stated that the theme of this Congress was to *strengthen* *the Forage-Livestock Systems of the World*, saying "The tremendous values of research and education are obvious" and "Your presence indicates a professional commitment to scientific excellence."

In a letter from John Block, United States Secretary of Agriculture, read by Gerald B. Carlson, USDA-SEA-AR, Secretary Block said: "Grasslands have been and will continue to be a vital part of a total food production system not only in the Unites States but throughout the world. Grasslands are the major source of feed for the livestock industry, which provides us with wholesome meat, milk, wool, and other animal products.

"The demand for food will become greater as the world's population increases; all of our resources will be challenged to meet these expanding needs and to maintain and enhance the quality of life.

"Therefore, I commend you, scientists, educators, ranchers, farmers, and industry representatives from around the world, for your efforts to meet these challenges facing us. Your willingness to commit your ideas and valuable time and resources speaks well of your commitment to grassland agriculture."

Sam Kincheloe, Manager of Agronomic Services, International Minerals and Chemical Corporation, told delegates that "This country's private industry and consuming public recognize the importance of forage and grasslands as a tremendous resource that requires proper management. For people, and for the livestock that are so much a part of agriculture, the grasses and legumes represent the two most important families of food and feed-producing plants. That is why we supply time and money to forages: because we in industry, like farmers, have a profit motive."

In his Presidential Address (<u>Appendix C-14</u>), Dr. Robert F Barnes stated that "A sound national grassland philosophy is required by any nation before an efficient grassland agricultural program can be developed. We all have an opportunity and a responsibility, whether we are scientists, technicians, administrators, farmers, ranchers, or consumers, to influence our nation's grassland philosophy and, in turn, the establishment of a sound agricultural policy that allows the effective development and use of those grassland resources. The importance of establishing strong local and national grassland organizations as a means of providing leadership for such efforts cannot be overemphasized."

Kentucky is known all over the world for its Thoroughbred horses and for the Kentucky Derby, known as *The Run for the Roses* and "the most exciting two minutes in sports." A unique highlight of this Congress was an evening at the Kentucky Horse Park attended by 1200 participants. Congress organizers provided transportation for all delegates and families to the park for a meal featuring *Foods of Kentucky* and the

opportunity to spend the evening touring the park. The Kentucky Horse Park is set on 1200 acres (486 hectares) of prime Bluegrass farmland in the Horse Capital of the World. Founded in 1978, it is the world's only park dedicated to man's relationship with the Horse. Delegates visited the International Museum of the Horse, Horses of the World, Parade of Breeds, and the National Horse Center complete with movies, interactive displays, and demonstrations. Horse drawn carriages and wagons provided overview tours where several Kentucky Derby winners could be observed grazing in individual paddocks.

Dr. L. R. Humphreys (Australia) was elected the new Chair of the Continuing Committee. In his closing remarks, he reminded the Congress members that "The distinct identity of grassland science needs to be maintained; it survives as a holistic discipline in an age of increasing specialization. The farmers of the world look for innovations that work; such innovations rarely enter farm practice as the outputs of single-discipline research."

During the Closing Ceremony, Gordon C. Marten, Program Chair, in reporting on Program Highlights, closed: "Finally, we were reminded that ruminant animals are now competing with humans for grain and protein supplements and that the human population is growing faster than the food-supplying ruminant animal population in the world. The potential for forages to replace grains in ruminant feeding systems must be realized. Scientists must join the planners and policy makers and be more assertive in making research information more generally available."



Kentucky Thoroughbreds grazing Kentucky bluegrass (*Poa pratensis* L.; Provided by Dr. Jimmy Henning.).

The Forage and Grassland Foundation

Following the final accounting of expenses incurred by the XIV Congress, there was a



Mr. Warren Thompson, University of Kentucky. (Provided by Dr. Garry Lacefield.) balance of approximately 100,000 US\$. At this point in time, there was no structure to carry over funds from one Congress to the next. Each Congress was responsible for its own funding and expenditures (<u>Appendix L</u>). Much discussion followed and several ideas were discussed as to how this money might best be used. Many suggestions called for immediate distribution and use of the funds in various ways. Dr. John Baylor (Pennsylvania) and Mr. Warren Thompson (Kentucky) argued strongly in favor of creation of a non-profit corporation to be used to

strengthen forage-livestock systems around the world by providing a perpetual source of funding to support

and enhance forage-livestock agriculture. This became the *Forage and Grassland Foundation* designed to operate within the income generated by the investment of the original funds so that the money generated by the XIV Congress continues to support scientific, educational, and charitable purposes in the broad interest of forage and grasslands. Since its formation in 1983, the *Foundation* has provided monies in support of the Congresses in Japan (1985), France (1989), New Zealand-Australia (1993), Canada (1997), Brazil (2001),



Dr. John Baylor, University of Kentucky. (Provided by Dr. Garry Lacefield.)

Ireland (2005), China (2008), Australia (2013) and India (2015). Emphasis has been placed on helping young scientists to attend the Congresses. The *Foundation* helped make possible the publication of *Terminology for Grazing Lands and Grazing Animals* (FGTC, 1991) and *An International Terminology for Grazing Lands and Grazing Animals* (Allen et al., 2011), published with the joint support of the Foundation, The International Grassland Congress, and the International Rangeland Congress (Chapter 6). The *Foundation* has provided the financial support to publish this *History of the International Grassland Congress - 1927 to 2020.*

We owe much to those who had the wisdom to create the means for this money to be an enduring source of support into the future for the benefit of our global grasslands.

The XV Congress, Kyoto, Japan - 1985

The XV Congress in Japan (25 to 31 August, 1985) opened at the Kyoto International



Dr. Iwao Nikki, President of the XV International Grassland Congress. (With permission from the American Forage and Grassland Council.)

Conference Hall. This was the first time in its 58year history that the Congress had met in Region VI (East Asia). Attendance represented 49 countries with 908 registered members. This included 773 full members, 27 students, and one, 1-day member. The Congress Theme was *Advances in Grassland Science for the Betterment of All Mankind.*

Over 479 papers were presented during the Congress. In addition to paper presentation sessions, mid- and post-Congress tours were held. A pre-Congress tour flew about 45 participants into Hong Kong. They toured Hong Kong and Kowloon Province, then took the air boat to Macau, China. They traveled to Canton, China, visiting two villages along the way. This was only the second time that Americans had visited these two towns in recent

memory. After spending the night in the White Swann Inn, the group flew into Tokyo and caught the bullet train to Kyoto (C. Pat Bagley, Personal Communication).

The four post-Congress tours were of 3 to 4 days duration and covered different regions of Japan – Hokkaido, Tohoku-Kanto, Chugoku, and Kyoshu. A program for Associate Members and 1-day cultural tours were offered on two of the main Congress days.

During the Opening Ceremony, Hisakazu Oizumi, President of the Japanese Society of Grassland Science, pointed out that "the tendency of increased protein consumption in the world has been clearly observed lately and the required increased production will probably depend upon animal feeding with concentrated feed made of cereal grains," a difficult



The Kyoto International Conference Hall where the XV Congress was held. (Provided by Vivien Allen)

challenge where total land area is limited and farms are small. He pointed out some of the challenges to global production including severe drought in Africa and other regions where escalating needs for great advances and rapid progress in grassland science throughout the world is needed to solve these issues.

Dr. Iwao Nikki, Congress President, stated that 20th century scientific progress and technological developments, while remarkable, have had the unintended consequence of similarly remarkable developments of resource-wasting industries, leaving the world's food problems unbalanced and unsolved (<u>Appendix C-15</u>). He further suggested that over-population, air pollution, water pollution, and environmental destruction threaten the very foundation of human existence. He stated that "grassland science, which is deeply connected to food production, land utilization, and environmental conservation, is charged with the heavy responsibility of being a science for human existence".

Professor L. R. Humphreys, spoke on behalf of the Continuing Committee of which he was Chair, and whose members represented all 11 Regions of the world, saying, "There is an 18th Century Japanese saying: 'When the mind water of ordinary beings is pure, enlightenment reflects itself upon it.' I am confident that at this meeting we shall learn greatly from each other."

Dr. J. Kondo, President of the Science Council of Japan, welcomed delegates and acknowledged the long distances travelled by many to attend the Congress: "I take it the right time to consider the shortage of food, particularly that of animal protein, because this is the urgent matter to solve in this part of the world. The function of the grassland, however, is not limited to the forage production and utilization of it but it also plays an important role in preserving the natural landscape conserving the environment and improving the amenity for human life" (Kondo. 1985).

"Until about 20 years ago, grassland science had not much developed in Japan and in many other Asian countries, where rice traditionally had been the staple food. The climate under the strong influence of the monsoon had been considered to be more suitable for rice production than for animal production. Eating habits of the people in the region, however, have changed remarkably and rapidly, and now there is a growing demand for more meat, milk, and dairy products. Pressure from the population expansion makes it even more difficult to meet the increase in the demand" (Kushibuchi, 1985).

In the Opening Business Meeting, Dr. Yoshisuke Maki (Congress Vice President) put forth the following proposal:

"On behalf of the Organizing Committee, I would like to propose that we, members of this Congress make an appeal to the people, the governments, those persons concerned for agriculture in every country of the world, and to the international organizations concerned, for acceleration of the grassland farming of the world. "We propose that the text of the appeal be submitted to the Resolutions Committee. After discussion by the Resolutions Committee, the Text of the Appeal will appear in Daily News on August 29 and then, adoption and declaration of the Appeal will be made at final Business Meeting.

"As professional workers in Grassland Agriculture, we have the potential through our science to make a difference, now through our collective voice, let us be heard as we recognize and call attention to this large need for help of all people world-wide."

Thus, the *Kyoto Appeal* proposal was unanimously adopted and committed to the



The Symbol of the XV Congress in Japan.

Resolutions Committee. At the final Business Meeting, **Resolution 1**, the *Kyoto Appeal*, was approved (<u>Appendix I</u>).

A highlight of the Congress occurred on the afternoon of 29 August, when about 250 delegates participated in a Farmers' Forum. This opportunity provided interaction between Japan's advanced farmers who introduced Japan's grassland industry directly to overseas research people, farm advisory officers, and farmers. Topography, climate, history in agriculture, land utilization, changes in food consumption, development of group farming and public pastures in Japan were outlined. Six speakers addressed

topics about Japan's grassland industry, generating much discussion among participants. Questions included "the rate of farmers' income tax. consumers' understanding of investing subsidies to dairy farmers, difficulties in finding brides in villages, the scope for increasing farm size, duration in leasehold of cropping land, increasing soil fertility by applying barnyard problems deficiency manure, in micronutrients in soil and forage crops in case of raising high milk producers, details of complete feeding system, feeding efficiency and daily body weight gain under hillside grazing, the ratio of white clover in orchard dominant pasture, economic grassadvantages of raising cattle in public pasture, dangers of *Theileriosis* and pink-eye infection in grazing cattle, the importance of fat content in carcass meat of Kobe beef, and other topics."



The Farmers Forum held as part of the XV IGC Congress.

The XVI Congress, Nice, France - 1989

The XVI IGC, held in Nice, France, 4 to 11 October, 1989, was the first Congress



Dr. Jean Picard, President of the XVI Congress. (From the website of the French Academy of Agriculture.)

located, at least in part, in the Mediterranean Region. The Theme was *Diversity in Grassland Production: Evaluation, Adaptation, Utilization and Appreciation.*

Dr. Jean Picard, President of the Congress, opened the meeting on 4 October in Apollon Hall of the Palais des Arts et des Congrès (Acropolis). Over 1,100 delegates representing 72 countries attended. In a Foreword to the Congress, R. Jarrige, Chairman of the Scientific Committee, stated: "What a crop! Eight hundred and six papers, from 72 countries. This progress from one congress to the next is a measure of the development of research for an increasingly better knowledge, control, and use, of the immensely varied grassland formations which cover one third of the earth's surface.

"The industrialized regions – Europe, North America, Oceania, Japan – supplied about two thirds of the papers. Those from the other regions have almost doubled their numbers since the Kyoto Congress. Latin America is a major contributor to this increase (84 papers), but all the other regions participate too: Africa (54), Eastern Asia (65, excluding Japan), Southern and South East Asia (24). The papers contained in the two volumes of the Proceedings supply thus an unequalled wealth of information. The subjects range from experimental results obtained in the most advanced laboratories to field observations made in countries where research is at

its beginning" (Jarrige, 1989). Congress sessions were held on 4 to 6 and 9 to 11 October and included a half-day Farmers Forum. Workshops took place on Saturday 7 October, with the Congress Organizers offering to provide facilities for specialist groups wishing to hold a workshop. Tours of Normandy/Brittany and Auvergne/Savoie were held before the Congress, and tours of Poitou/Limousin, Italy and Spain/Portugal after the Congress. There was a 2-day mid-Congress tour



The Little Pinecone Train that took delegates on a Congress tour. (Provided by Vivien Allen)

to Montpellier and also some 1-day mid-Congress tours. A highlight of one of the tours was a ride on the Little Pinecone Train from Nice up into the hills. Other memories include sipping Bordeaux in small cafés around the venue and a visit to a small farmer whose flock of sheep was so small as to anticipate the farmer knew them all by name. A full cultural program was organized for accompanying persons.

The *Kyoto Appeal* (<u>Appendix I</u>), adopted at the previous Congress in Japan, had been forwarded to Governments around the world, as well as to several International Institutions. Dr. Iwao Nikki (Japan) reported:

"The president of the 15th (XV) IGC received a great number of replies" and that "this matter appears to have had a great impact, not only on the 15th IGC but also for future Congress."

"The most commonly shared elements among Governmental replies [to the Kyoto Appeal] were: 1) expressions of appreciation for our sending of the appeal; 2) an expressed interest in grasslands and environmental conservations; and 3) intent, as Governments, to discuss the specific contents of the appeal."

"It seems apparent to me that grassland farming is literally becoming a world farming system, and that grassland science is, as a result, becoming indispensable to the welfare of mankind as we seek ways to take better care of the earth and try to discover long-term solutions to the world food crisis."

"In this sense, the *IGC Kyoto Appeal* may be seen to occupy a place of special importance in the history of the IGC" (Nikki, 1989).

At the final Business Meeting on 11 October, Resolutions were presented on several topics. **Resolution 1** (Appendix J) is of particular interest and can now be viewed in light of Congresses and actions that occurred both before and after the XVI Congress. This Resolution addresses the continuing need for scientific and educational communication both within and among existing Congresses/Organizations on a global basis. It further suggests the advisability of creating an overarching International Grassland Organization to provide a Central Governing Body. This had been discussed previously in various versions as far back as the III Congress (Chapter 5, pages 141 to 143 and Appendix J). With the formation of the International Rangeland Congress and its first meeting in 1977, developing a Central Governing Body became of even more concern (Chapter 5). As expressed by Dr. Robert F Barnes at the XIV Congress, "it is only as we work together for good that we can truly serve mankind." Barnes expressed concern for the virtually inevitable 'fragmentation' occurring when we needed to speak as one voice. At the following XV Congress in

Japan, emphasis was again placed on the need to expand and update communication among grassland organizations worldwide.

Resolution 1 calls for establishment of a working group "to study and explore the feasibility of establishing an international organization to provide improved communication, cooperation and coordination of activities in science and technology associated with forage, grassland, and rangeland resources." The needs and values of such an organization remain an unanswered question and the form and substance of an overarching body has yet to be designed.

In the Closing Ceremony, President Picard stated, "Last year at this time when I watched the weather reports it was raining every day in Nice! But this year to my relief the sun has shone with its customary brilliance and you have seen Nice weather has reflected on the Congress itself. It is perhaps the reason why we received too many compliments while some criticism would have been willingly accepted" (Picard, 1989; <u>Appendix C-16</u> for Final Address).

Following this Final Address, the Congress was officially adjourned at 5:30 p.m., Wednesday, 11 October 1989.

The XVII Congress, Palmerston North, New Zealand, and Rockhampton, Australia - 1993

The XVII Congress was held 8 to 21 February, 1993, with the Theme Grasslands for



Dr. Ray W. Brougham, President of the XVII Congress. (Source: AgResearch New Zealand.)

Our World. Although the second Congress in Sweden included sites visited in Denmark, this was the first to have a truly split venue between two countries - New Zealand and Australia. A letter from Dr. Bob Clements, Chief, Division of Tropical Crops and Pastures, Brisbane, Australia, to Dr. Ray Brougham and others had urged New Zealand to submit an invitation to hold the 1993 Congress. Discussions evolved toward a bid but only if it were to be joint with Australia. A joint bid was ultimately submitted and accepted at the XVI Congress in Nice, France, in 1989. It was one of the largest, best-attended Congresses held to date with over 1200 participants representing 100 countries (Humphreys, 2019).

This Congress had four venues including Palmerston North, Hamilton, and Lincoln in New Zealand and Rockhampton in Australia. The two-country, four-

venue approach ensured that at one Congress, most of the climatically different regions of the world were embraced. Participants could see, first-hand, grasslands that ranged from tropical-subtropical to temperate-cold temperate regions. Half-day field visits were featured at three of the venues.

Notable features of the program at Palmerston North were the inclusion of a Farmers Forum and an evening Public Forum on *God, Gene Jockeys and Society*. In addition to the Congress sessions and Associates programs at the four venues, there were post-Congress tours from Rockhampton and five, 2-day mid-Congress tours in New Zealand. Three of these were in Canterbury, South Island, looking at rangeland



management and herbage seed production, and two were in the North Island visiting the Waikato and the East Coast.

This was the first Congress to use a poster approach where submitted papers followed invited papers in each Session. This Congress also made a concentrated effort to attract delegates from developing countries where a large proportion of the world's grasslands are located. More than 400 delegates from these countries attended with about 30 in key roles as main session speakers. Many were partially or fully supported financially by the Congress, largely through the efforts of Dr. Ray Brougham (New Zealand).

The Opening Ceremony was held 8 February at Massey University, Palmerston North,



Dr. Garry Lacefield (Kentucky) attends the Opening Ceremonies at Massey University, Palmerston North, New Zealand.

New Zealand. Dr. Brougham was President with Professor Iohn Hodgson (New Zealand) as Chairman and Dr. Barry Walker as the Australian Chairman. Dr. Brougham opened the Congress by welcoming attendees and asking the question, "Why are we here?" He continued by saying, "...we are here to review the grassland regions and resources of the world and to review progress made in their development and improvement, their management and productivity, their utilization, their degradation, where

this is occurring, and their sustainability. We are also here to ensure that mechanisms of technology transfer and in particular information on wise use and practices associated with productivity increases are transferred to the practitioners, the farmers, the pastoralists, the managers, the policy makers and the governments that are responsible for the world's grassland resources" (Brougham, 1993a; <u>Appendix C-17</u>).

Dr. Brougham stressed that the world's dramatic increases in population could be the singularly most important factor creating the most intense pressure on the world's grasslands. He pointed out that economic motivations may be equally damaging, especially by those profit-motivated and ignorant of the damage done to our grasslands, which could cause disproportionate harm to grasslands in developing countries. He emphasized that it was essential that these impacts were part of the Congress's agenda.

Dame Catherine Tizard, Governor-General of New Zealand, addressed attendees in the formal opening address saying, "For those of you fatigued by a trip from the other side of the world, I can assure you that if there was anything we could do about it, we would have moved closer to the rest of the world years ago. It's just like quarantine. The trouble is, after 150 or so years of pastoral farming, we're still not sure if you should be quarantining us or we should be quarantining you."

Dr. David G. Crespo, Chair of the Continuing Committee, reminded delegates of the "serious threats that our grasslands and forage crops are facing because of the lack of vision of many policy makers." He referred to heavy supplementation of livestock with grains and concentrates mainly due to subsidies and other misguided incentives resulting in farmers giving up trying to improve their grasslands (<u>Appendix C-17</u>, <u>pages 263-264</u>).

In the Opening Business Meeting, Dr. Crespo reported that he attended the IV International Rangeland Congress where he requested that rangeland and grassland workers unite efforts to defend their lands from the attacks of policy makers who through such subsidies are discouraging grassland-rangeland and forage improvement and who are contributing to the degradation of rangelands. An invitation to the International Rangeland Congress to attend the XVII Grassland Congress was extended and a joint meeting was suggested and should be discussed.

The Final Business Meeting was held 21 February 1993, in Pilbeam Theatre,

Rockhampton, Australia, with Dr. R. Brougham W. presiding. Resolutions included proposed Amendments to the Constitution, continuing dialogue with the **International Rangeland Congress** to explore opportunities for cooperation and co-ordination of and activities. programs suggestions for addressing the declining investment in scientific training and research in many countries, and improvements in availability of improved forage



Pilbeam Theatre, Rockhampton, Australia (Provided by Garry Lacefield)

cultivars in both developed and developing countries.

In his final statement, President Brougham reminded participants of his challenge at the beginning of the Congress to reestablish all those involved in the custody of the world's grasslands as caring, innovative, and essential people with important and vital contributions to make for the world's good. Dr. Brougham had been especially pleased with the maturity of the contributions to the Congress from the developing world. "The challenge to participants was to take the messages, the findings, and the types of assessments made at the Congress and put them into practice not only in particular fields of work but in a holistic way. He suggested there was little time left, perhaps 20 or 30 years, before many problems in the world matured. There was a need for price per product to improve across the whole range of biological products. This required a political voice stronger than that of the corporate giants if resources are not to be further lost from the food-producing areas of the world. The results of this Congress should be projected strongly and forcefully; concurrently participants needed to practice good science around the issues highlighted at the meeting. There had to be an emphasis on achieving sustainability of science funding in the long term" (Brougham, 1993b).

Dr. Brougham died on 24 October, 1993, just 8 months after this Congress took place. The Proceedings of this XVII Congress were dedicated to him, saying "In memory of Raymond Wilkie Brougham (23 May, 1926, to 24 October, 1993), President of the XVII International Grassland Congress, and a champion of international grassland science."

In a Eulogy at his funeral, Dr. Bob Clements remarked:

"I should end by saying something about his special contribution to the International Grassland Congress. The first Congress he attended was in New Zealand in 1956. It was probably his first exposure to the international world of grassland science, and it was a powerful influence on his own life. He was only 29 years old at the time. In 1970, he attended the Congress in Australia as a keynote speaker. I still have clear memories of that presentation. Apart from (I think) the Russian Congress in 1974, he attended every subsequent International Grassland Congress: Leipzig; Lexington, Kentucky; Kyoto, Japan; Nice, France; and, of course, New Zealand/Queensland this year. From 1986 to 1993 he represented Australia and New Zealand on the Continuing Committee of the IGC. He became quite angry that the Congress was of so little value to developing countries. He thought it was insulting to them. As President of the New Zealand Congress, he was able at last to give scientists from the third world the opportunity to take centre stage and communicate the issues that were of such concern to them – and, by this time, to Ray.

"Ray Brougham was a man of the people, from a small country remote from most of the world; but he became one of the most influential international pasture scientists of our time, and his life was an inspiration to us all. "

The XVIII Congress, Winnipeg, Manitoba, and Saskatoon, Saskatchewan, Canada - 1997

The XVIII IGC in 1997 was the second Congress to have a split venue with the opening



Dr. Bert R. Christie, Chair of the Organizing Committee of the XVIII Congress.

session on 8 June in Winnipeg, and the closing session on 19 June in Saskatoon. The Congress opened under the Theme of *Grasslands 2000* and was attended by 1,018 delegates, 68 students, and 103 accompanying persons representing 94 countries. Bert R. Christie (Canada) was Chair of the Organizing Committee. Duane McCartney, Guy Allard, Real Michaud, and Jock Buchanan-Smith also provided important leadership to this Congress.

Paper presentation sessions were held at Winnipeg from 9 to 12 June and at Saskatoon from 16 to19 June. This Congress was notable for the high quality of the major presentations and papers (<u>Chapter 3, pages 109 to 110</u>).

The Congress arranged a wide range of tours. The three, 2-day mid-Congress tours starting in Winnipeg and ending in Saskatoon that took delegates from one Congress venue to the other were truly remarkable. There were 4- to 6-day pre-tours in the Canadian maritime provinces and in the Southeastern USA, and five post-tours visiting (i) Alberta, (ii) Southwestern Ontario, (iii) Montana, Wyoming, and Utah, (iv) the Western Canada Farm Progress Show, and (v) Cuba. In addition, a series of afternoon/evening tours at both Winnipeg and Saskatoon were available as well as a full accompanying persons program.

In his Opening Ceremony Address, Dr. Tom Nolan, Chair of the Continuing

Committee, welcomed all to this millennial congress, stating that "...this end of millennium XVIII Congress will update the present state of knowledge and perhaps more importantly identify research priorities to lead into the next century. It takes place at a time of great challenge to grassland scientists." He pointed out that recent developments in production of disease and/or chemical resistant transgenic



plants and a possible cure for cancer extracted from the African bush willow are examples of the potential benefits of grasslands and why it is so essential to maintain their biodiversity (<u>Appendix C-18</u>).

The First Business Meeting was called to order by Tom Nolan. He thanked members of the Continuing Committee for their serious efforts to advance the well-being of what the late Ray Brougham had called "This great Movement." Nolan congratulated the New Zealand/Australian Organising Committee of the XVII Congress for prompt publication and circulation of the Proceedings, stating that Congress Proceedings are a most important component of the Congresses and that they are a "registered marker of the state of knowledge and future outlook for world grassland at that time."

Nolan reported that bids had been received from China and Brazil for the XIV



A booklet prepared for the Congress in Canada.

Congress. The majority vote favored Brazil. Nolan thanked China for their great interest and stated that it was "only a matter of time" until China will host the Congress.

Discussion followed concerning revisions to the IGC Constitution as requested in **Resolution 1** at the XVII Congress. Nolan thanked Professor Wilkins (UK), who had been involved in writing the 1977 Constitution, and Professor Humphreys (Australia), who had chaired the Resolution Committee for the XVII Congress for their assistance in addressing these issues (<u>Chapter 4</u>). At the Final Business Meeting, **Resolution 1** recommended a Committee be established to review the numerous suggestions and to present a new draft Constitution at the next Congress in

Brazil. The motion was seconded by E. Piano (Italy) and carried.

Regarding "…liaison with the International Rangeland Congress," Nolan reported that the position generally held by both organizations was a sound basis for contact and discussion exists that should lead to a coordinated effort by both Congresses to "promote interchange of scientific information on all aspects of natural and cultivated grasslands" as set out in the Constitution. Adherence to historic structures was, however, considered unlikely to fulfill this objective.

It was for this Congress that Professor Ross Humphreys had specifically prepared his book *The Evolving Science of Grassland Improvement* (Humphreys, 1997). Using the proceedings from Congress meetings since 1937, Professor Humphreys identifies changes in grassland science, examines their current status, and looks at their future prospects. In the Appendix, there are historical data and information on the individual International Congresses up to the current Congress. At the Final Business Meeting, Real Michaud, Chairman of the Resolutions Committee, proposed the following Resolution: "It is recommended that the Continuing Committee of the International Grassland Congress select a small committee to make a representation to the Continuing Committee of the International Rangeland Congress on the possibility of a joint meeting of the Congresses three years after the Brazil Congress and to put together a resolution for an eventual amalgamation of the two Congresses" (Seconded by Professor L. R. Humphreys, Australia). R. J. Wilkins (UK) proposed an Amendment to the last sentence of the Resolution as follows: "...and to consider the possibility of an eventual amalgamation of the two Congresses." It was seconded by R. R. Hart (USA), and the Amendment carried.

During the Closing Session, Bert Christie addressed the Congress, saying: "I hope you will agree that this Congress has generated much enthusiasm and interest. Let us not lose that enthusiasm. The other day, I was speaking to a former colleague who had retired many years ago. He was surprised that these Grassland Congresses were still continuing. His comment was that he had expected them to disappear before now. "We must have something unique here, otherwise the Grassland Congresses would have disappeared like many other Congresses of this type. The Congresses are one forum where delegates can discuss the performance of plants and animals, and their interactions with the soil, environment, economics, climate, etc. In recent years, the topics presented at these congresses have become more varied and broader, representing the diverse nature of the topic and multidisciplinary requirement for its study. This is a good sign.

"As we leave, we need to remind ourselves, the general public and our governments that grasslands comprise a significant portion of the earth's surface. These grasslands are important not only for food production in the future, but for ensuring stability of production. These grasslands can continue to be used for food production year after year, which cannot be said for many agricultural crops. As someone once said, 'The bread baskets of today are the dust bowls of tomorrow.' We have learned, at great cost, that continuous grain crops lead to deterioration of the soils. Grasslands, alone and in rotations, are necessary to ensure that today's breadbaskets continue to be productive".

The XIX Congress, São Pedro, São Paulo, Brazil - 2001

The XIX Congress was held in São Pedro from 11 to 21 February with the theme of



Dr. Sila Carneiro da Silva, President of the XIX Congress. (Source: Sila Carneiro da Silva.)

Grassland ecosystems: An outlook into the 21st Century. This Congress addressed many major issues of grasslands in various climatic regions and provided excellent coverage of Tropical grasslands (Chapter 3, pages 110 to 112). About 650 researchers from more than 90 countries attended. This was the second time the Congress met in Brazil. The Ninth Congress had convened in the city of São Paulo in 1965. The XIX Congress was in two parts with sessions on 12 to 14 February, and 19 to 21 February, allowing several days for mid-Congress tours. Six tours visited different parts of Brazil with all involving air travel. These covered (i) Eastern Amazon, (ii) Northeast, (iii) Cerrados, (iv) Central West, (v) Pantanal, and (vi) South. There were also a series of regional day tours offered for this mid-Congress period, all starting and finishing in São Pedro.

The tours included visits to farms, research institutes, and academic institutions. The official travel agency for the Congress was able to organize leisure tours.

At the Opening Business Meeting of the Congress, Dr. Sila Carneiro da Silva, President of the Congress, introduced Dr. Bob Clements, Chair of the Continuing Committee. Dr.

Clements addressed the Congress saying: "One of my lasting memories of this Congress will be the sea of golden shirts that were worn by the team of grassland researchers that welcomed us at São Paulo airport. After traveling 15,000 kilometers it was indeed a cheerful sight, and in my mind, this will always remain the Golden Congress. On behalf of the Continuing Committee of the International Grassland Congress and on behalf of the international community of grassland scientists, I have great pleasure in declaring the Golden Congress - the XIX International Grassland Congress - open. **Eu declare aberto o congresso de ouro!**" (<u>Appendix C-19</u>).





Dr. R. J. 'Bob' Clements, Chair of the Continuing Committee. (Source: Bob Clements,)

IGC (2005); 2) Consideration of opportunities to enhance collaboration between the

International Grassland Congress and the International Rangeland Congress; 3) Rewriting the Constitution of the International Grassland Congress; and 4) Providing advice and assistance to the Organizing Committee of the XIX International Grassland



The 'Golden Congress' welcoming team! (Source: Sila da Carneiro da Silva)

Congress - the current Congress now in progress. The Congress had received bids from Ireland and China for the XX Congress. Both were of "good quality." A clear majority of the Continuing Committee voted for the venue in Ireland. Dr. Clements congratulated the successful bidders and encouraged the Chinese Grassland Society to continue with its efforts to attract the Congress.

Dr. Clements also reported on efforts to enhance collaboration with the International Rangeland Congress, reminding those present that delegates at the 1997 Congress in Canada had instructed the Continuing Committee to "make representations to the Continuing Committee of the International Rangeland Congress" about the possibility of a joint meeting of the two congresses. In pursuing these instructions, Dr. Clements had met with Dr. Margaret Friedel, Chair of the International Rangeland Congress. They drafted a document on the pros and cons of a joint meeting, which was circulated to all members of both Continuing Committees (Appendix K). This became the first major step to the eventual joint meeting in China in 2008 (Chapter 5).

Following instructions from the XVIII Congress in Canada, revision of the IGC Constitution had taken place under the leadership of Professor Roger Wilkins (UK) and a small writing team. Dr. Clements informed the delegates that because no suggestions for change had been suggested following wide circulation of the draft, as well as its placement on the IGC website in February, 2000, it was clear "that the constitution has the approval of IGC members." Because the re-written constitution

did not contain any changes that were not proposed and adopted in Canada or earlier, there was no need for a formal vote of endorsement (<u>Appendix F – 5</u>). Clements commended the writing team's "sterling effort."

The Theme of the Congress in Brazil was Grassland Ecosystems: An Outlook into the



Dr. John Hodgson, Massey University, New Zealand. (Picture provided by Mrs. Ruth Hodgson.)

21st Century. In addressing this theme in the opening Congress Session, Professor John Hodgson presented Grassland Production and Management - Trends and Perspectives for the 21st Century, stating, "The XIX International Congress is set in a time of unprecedented change, with increasing uncertainty about the long-term sustainability of established systems of land use. The major threats are the continuing rapid increase in the human population of the world, the pressure on land resources to meet food requirements, the effects of global warming on climate stability, and the consequence of these factors on land resource stability and food production potential. Overlying these threats is the impact of the global economy on land use policies" (Hodgson, 2001).

Addressing the future of the International Grassland Congress in this scenario, Hodgson suggested that "In the past it (the IGC) has acted primarily as a medium for exchange of information and ideas about research and practice amongst grassland professionals," but this may be questioned as the "grassland profession may be seen as somewhat isolated and talking to itself." He questioned "... can we afford not to get involved in what might be termed grassland sociology and politics? If the IGC does not campaign for better balance in determining the allocation of resources of grassland research and development, and in the planning and administration of research programmes, who will? And which agencies are better fitted than the IGC to promote the importance of grasslands as a moderating force in facing, for example, the issues involved in enhancing world food supply, conservation of soil and vegetation resources, and amelioration of global warming?

"However, it must also be accepted that the current constitution, with its emphasis on arrangements for a linked series of conferences rather than the provision of continuity and support for a body of international importance, does little to aid the development of a credible force for the promotion of grassland interests. At the very least we should give high priority to the procedures necessary to achieve effective reunion with the International Rangeland Congress so that we can again speak with one voice about issues of vegetation use and pastoral livestock production. This will be a small initial step, but it could provide the catalyst for a major development in the influence of grassland professionals on the processes of planning and funding grassland research and development programmes on national and international scales" (Hodgson, 2001).

Hodgson referenced Hadley (1993) who challenged the XVII IGC to "examine what needs to be done and what must not be done in order to promote grasslands as sustainable systems." Hodgson asked, "Can we meet that challenge?" (Hodgson, 2001).

Also, at this São Paulo Congress, L. R. Humphreys presented *International Grassland Congress outlook - An Historical Review and Future Expectations* in which he states, "It is not enough to build further upon the existing structure of grassland science; we need to discover new foundations and underpin the whole structure afresh. We have to recognize that environmental protection only works where it is married to economic incentives, as occurred with the adoption of minimum tillage. Pragmatic innovations will only emerge if governments and institutions fund long-term grassland research; this also requires that the political will is generated through our effective involvement in public controversy" (Humphreys, 2001).

The Closing Business Meeting held 21 February, 2001, was jointly chaired by Dr. Bob Clements and Dr. Sila Carneiro da Silva. Eight Resolutions were presented, including **Resolution 2** that recognized "the very good contribution of the working group, chaired by Professor Roger Wilkins, that edited the existing Constitution to comply with the various suggestions that were agreed upon in Canada in 1997 and at previous Congresses." **Resolutions 4, 5,** and 6 were key to building a stronger relationship with the International Rangeland Congress and opening the way to the joint meeting of the IGC and the IRC in China in 2008. These Resolutions endorsed the concept of closer cooperation with the IRC to promote a more efficient and effective interchange of information on all aspects of grassland and range science to meet common goals and objectives. The IGC Continuing Committee Chair should explore with the IRC Continuing Committee Chair mechanisms for meeting common goals and objectives. Furthermore, these two chairs should meet within the next 12 months to iointly identify and promote shared activities for meeting these common goals and objectives. **Resolution 7** dealt with incorporating in the main Congress Program topics concerning the role of grasslands in a more sustainable agriculture. **Resolution 8** resolved that practices evident at the 1993 Congress in New Zealand and Australia that stimulated strong attendance of grassland scientists from developing countries be continued and explored in future Congresses. All Resolutions were supported unanimously by the Delegates.

Dr. Vivien Gore Allen (USA) was elected as the new chair of the Continuing Committee. She was the first woman in the history of the Congress to hold this position. The XIX Congress was closed by President Sila Carneiro da Silva with his thanks to all who had contributed to the success of the Congress.
The XX Congress, Dublin, Ireland - 2005

The XX Congress opened in Dublin, Ireland on Sunday, 26 June to 1 July, 2005. Mr. Jim



Mr. Jim Flanagan, President of the XX IGC. (Provided by Dr. Frank O'Mara)

Flanagan (Teagasc; Ireland) was President, Dr. Frank P. O'Mara (Ireland) served as Secretary, and Professor Roger J. Wilkins (UK) was Chairperson of the Scientific Committee. This Congress assembled delegates from around the world, including policy makers, consultants, producers, and people from associated industries, to discuss issues targeted to the Congress theme, Grasslands - A Global Resource, Substantial international input was included as the Scientific Committee organized the three main thematic areas: Efficient Production from Grassland; Grassland and the Environment; and Delivering the Benefits from Grassland.

As stated by Dr. Bob Clements at the XIX Congress in Brazil when he announced Ireland as the next venue, "A feature of the Congress will be consideration of

the role of grasslands not only in providing feed resources for livestock and in generating income for farmers, but also as a global resource for wildlife, biodiversity, soil stabilization, and water catchment and quality. The environmental aspects of grasslands are receiving greater attention every year, and this trend seems certain to continue. Grasslands also have significant social and



Roger Wilkins, Chair of the Scientific Committee, and Vivien Allen, Chair of the Continuing Committee, discuss the XX Congress in Ireland. (Provided by Dr. Frank O'Mara).

amenity values, and these have become

increasingly

Dr. Frank O'Mara, Secretary of the XX Congress. (Provided by Dr. Frank O'Mara)

important during the last twenty years and seem likely to increase even further."

The main congress was held in University College Dublin (26 June to 1 July, 2005). Five satellite workshops followed the main Congress and were held at Aberystwyth, Wales; Belfast, Northern Ireland; Cork, in the Republic of Ireland; Glasgow, Scotland; and Oxford, England. In addition to the main congress and the satellite workshops,



there were pre- and mid- Congress tours and a program for Associate Members. Three of the pre-Congress tours started and ended in Dublin, making visits in the west, northwest, and southeast of Ireland respectively, whilst the fourth tour started at Reading (near the London airports) and ended in Dublin. The day in the middle of the main Congress was devoted to eight alternative tours that provided a mixture of research centers, farms, and touristic features.

The Congress was attended by over 1,000 delegates from 80 countries. It was at this



On the Satellite Workshop in Cork, Republic of Ireland, Michael O'Donovan tells international delegates about Ireland's unique grasslands. (Provided by Dr. Frank O'Mara).

landmark XX Congress that Professor Ross Humphreys published A brief history of the International Grassland *Congress*, his third account of our history (Humphreys, 2005). This brought our history up-todate and added new details to build upon his previous publications on the International Grassland Congress. It is now a permanent part of the Proceedings from the XX Congress.

At the Opening Business Meeting, President Flanagan introduced Dr. Vivien Allen, Chair of the Continuing Committee, who officially opened the Congress. She recognized and thanked the Organizing Committee and others for their professionalism, dedication, enthusiasm, and hard work required for planning such a Congress: "This is the first time in the nearly 80-year history of the IGC that we have convened this Congress on this misty green Island called Ireland and it seems particularly appropriate to celebrate our 20th Congress here where forages and grazing animals are of such obvious importance and provide such an exquisitely beautiful landscape. Ireland! The very name conjures up images of lush grasses, peaceful pastoral scenes, and grazing animals" (<u>Appendix C-20</u>).

Allen reported that two separate but ultimately converging issues had been addressed by the Continuing Committee during the four years since leaving São Paulo, Brazil in 2001. The first was the continued interest in development of a bid from China, and the second was the ongoing interest in a joint meeting with the International Rangeland Congress. After much discussion and many meetings, Allen announced that by unanimous vote, "the IGC Continuing Committee accepted the bid from China and I can, therefore, declare that the XXI International Grassland Congress will be held in Hohhot, Inner Mongolia (29 June to 5 July, 2008) in a joint venue with the International Rangeland Congress."

The audience included many individuals from the IGC, the IRC, and from China who had contributed much to the success of this unique bid. Two who were given special recognition were Professor Hong Fuzeng, former Vice Minister of Agriculture and Honorary Professor at the China Agricultural University, and Professor Ren Jizhou, Academician of the Chinese Academy of Engineering, the pre-eminent grassland scientist of China and the Founding Director of the Gansu Grassland Ecological Research Institute: "These two individuals, more than any others, have worked tirelessly and constantly for more than 12 years to bring this day about. They never gave up. Today their dream and their vision become a reality."

At this first business meeting, Allen reported that the five Resolutions that had been passed in São Paulo and required further action had all been addressed. These Resolutions included 1) building greater linkages and cooperation between the IGC and the IRC and specific ways to proceed with this; 2) a directive to incorporate specific topics dealing with "contributions of grassland to a more sustainable agriculture;" and, 3) to continue the model set in 1993 at the XIX Congress to enable and encourage scientists from developing countries to attend and participate. Over 100 scientists from developing countries attended the Ireland Congress with either partial or full funding made possible by the Organizing Committee and the sponsorship of this Congress. Allen congratulated the Organizing Committee for their tremendous efforts and, on behalf of the entire Congress, thanked the many sponsors who helped to support this XX IGC. The death of Mrs. Jan Crichton, a member of the Organizing Committee, was recognized along with others lost since the last Congress.

During the Congress, the Continuing Committee met (27, 28, and 29 June) and addressed several topics that have had ongoing impact. The logistics of the combined IGC/IRC Congress to be held in 2008 were discussed. Specifically, because this was to be a truly shared Congress, each Congress needed to be sensitive to the other's specific policies and requirements. This included the International Rangeland Congress policy of a 10 US\$ surcharge for delegates attending their Congress. The IGC did not have such a policy, but the Committee agreed that for this joint Congress, the IGC would follow the same policy. Discussions followed regarding the handling and use of the residual funds that would be generated (Appendix L). Also discussed by the Continuing Committee were the needs for an IGC logo and stationery specifically identifiable for the IGC official communication. The Continuing Committee endorsed the use of both as described in <u>Appendix M</u>.

The growing need for an IGC permanent website was also discussed. This would house information for upcoming meetings but would also be an archive for past meeting information as well as other functions needed by the Congress (<u>Appendix M</u>). Preliminary discussions regarding the website, a mechanism for handling residual monies following the joint IGC/IRC 2008 Congress, and other possible Congress services, were held with Dr. Ellen Bergfeld, Executive Vice President, American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America located in Madison, Wisconsin, USA. It was the decision of the Continuing Committee to pursue the website and business assistance with Dr. Bergfeld.

The Final Business Meeting was jointly chaired by President Jim Flanagan and Continuing Committee Chair, Vivien Allen. Appreciation and thanks were expressed to the organizers of this XX IGC for a very successful Congress. Eight Resolutions were brought forward, and each was passed unanimously. These Resolutions expressed "thanks to the Ireland Government, sponsoring organizations, and named individuals for delivering a very successful Congress." The "excellent contribution of the scientific committee and editors of the XX IGC" was recognized. Continuing the concerns expressed at previous Congresses, delegates requested that the Organizing Committee for the XXI IGC be encouraged "to stimulate a strong delegate attendance from all developing countries."

Resolution 4 asked that a permanent IGC website be established (<u>Appendix M</u>), and **Resolution 5** asked that the revision of the *Terminology for Grazing Lands and Grazing Animals* be presented at the joint IGC-IRC Congress in 2008 (<u>Chapter 6</u>).

Resolution 6 commended the decision to hold a joint IGC and IRC congress in China, 2008.

Resolution 7 requested that the Continuing Committee develop and implement innovative ways to encourage student and young scientist participation and to recognize outstanding students.

Resolution 8 stated, "The members have discussed global issues of grassland production and management related to food production, environmental, and social issues. The members request that the Continuing Committee express its concern regarding decreased funding of research and development in developing countries to FAO in Rome about the FAO's activities to foster research and development towards sustainable grassland productivity in developing countries. Grassland production in developing countries is vital to producing food and increasing livelihoods in relation to abating poverty and hunger."

Dr. Gavin Sheath (New Zealand) became the new Chair of the Continuing Committee. President Flanagan thanked the organizers of this XX Congress, the Continuing Committee, and delegates for attending.

The XXI IGC and the VIII IRC, Hohhot, China – 2008

This first joint Congress of the IGC and the IRC was held in Hohhot from 29 June to 5



From left: Professor Yun Jinfeng, Inner Mongolia Agricultural University; Professor Hong Fuzeng, Honorary President of the Chinese Grassland Society; and, Mr. Guo Qijun, Vice-Governor of the Inner Mongolia Autonomous Region. They served as joint Presidents of the Congresses. (Provided by Professor Nan Zhibiao, Lanzhou University, and Professor Han Guodong from Inner Mongolia Agricultural University.)

that Focus on a Specific Type of Grazing Land, page 143 to 151). Although many individuals contributed much to the planning and execution of this Congress, three who were key to bringing about the possibility of a shared venue in China were Professor Ren Jizhou, Academician of the Chinese Academy of Engineering and Founding Director of the Grassland Gansu Ecological Research Institute,¹⁶ Dr. Bob Clements (Australia), a Past Chair of the IGC Continuing Committee, and Professor Hong Fuzeng, former Vice Minister of Agriculture and Honorary Professor at the China Agricultural University. Prior to the planning of a joint meeting, both

July, 2008. The overall theme was *Multifunctional Grasslands in a Changing World.* Within this theme, the Congress program addressed three major themes, each including both Grasslands and Rangelands (<u>Chapter 3, page 114 to 115</u>).

It was the first time that either the IGC or the IRC had met together or had been to China to hold a Congress. It had taken many years of discussions and work to bring about the opportunity for this joint meeting of the two Congresses with a venue in China (Organizations/ Congresses



From left: Professor Ren Jizhou, Dr. Bob Clements, and Professor Hong Fuzeng. These three opened the door to the possibility of a shared IGC/IRC Congress. (Provided by Professor Deng Bo, China Agricultural University.)

Congresses had expressed interest in China to develop an independent bid. Thus,

¹⁶ Now College of Pastoral Agriculture Science and Technology, Lanzhou University.

China presented an excellent location for this joint meeting with opportunities for visiting the full spectrum of ecosystems of interest to both Congresses along with technologies associated with research, use, and management, as well as the challenges and opportunities presented by their grazing lands. Over 1,500 delegates attended the Congress, representing 79 countries from around the world. The delegates included a total of 246 full-time students registered for the Congresses.

Four pre-Congress tours included 1) Yunnan Province to see improved forages and higher rainfall forage production; 2) The Gansu tour up the Silk Road to the Gobi Desert and high elevation grasslands; 3) The Xilingol Grasslands of Inner Mongolia; and, 4) The Hulunbeier Grassland of Inner Mongolia. During the week of pre-Congress tours, a workshop on Inventory Assessment and Monitoring of the Ecological Status of Rangelands was available. On 28 June and the morning of 29 June, five other workshops were open to participation by delegates. These included 1) Reaching Herdsmen and Farmers: An Extension Approach, 2) Improving Grasslands and Incomes in Western China, 3) The Temperate Grasslands Conservation Initiative, 4) A Shift in Natural Resources Management Paradigms, and 5) Grassland Learning and Livelihoods. All delegates attended one of five mid-Congress tours. The post-tour (7 to 12 July) was in the Mongolian Peoples' Republic, both starting and finishing in Ulaanbaatar. Delegates and Associate Members enjoyed elaborate Opening and Closing Banquets as well as a concert of Mongolian dance and song, all related to grasslands and rangelands.

In a Foreword to the Congress, Mr. Hong Fuzeng, Honorary President of the Chinese Grassland Society, Mr. Guo Qijun, Vice-governor of the Inner Mongolia Autonomous Region, and Mrs. Yun Jinfeng, Professor at the Inner Mongolia Agricultural University, spoke, emphasizing

"Humans have created a huge ecology crisis when they produce welldeveloped material civilization over the last century. A radical changing world is ahead of us, where [the] global climate is warming, grain safety is getting [more] urgent day by day, energy resources sinks (declines) rapidly, while mankind'[s] living surrounding worsens and biodiversity reduces.

"A century [of] change is so great that human being has created tremendous success in the development of material civilization/progress. However, a series of crises involving global warming, food security, and diminishing natural resources have also evolved and escalated, which greatly questions whether people can have sustainable survival and development on earth or not. It is commonly recognized that grassland, which makes up 33.5% of the global land is a tremendous resource for mankind with various functions. Grassland is not only the foundation for human civilization and development,

but also provides anchorage for plant growth, offers defense [against] wind erosion, prevent[s] flood[s], water-logging, and other natural calamities. Moreover, there is a broader prospect of grassland ecosystems on its role in supplying organic and sustainable farm produce, sightseeing, agritourism, and culture. Most importantly, grassland not only relates to the improvement of global economic development and peoples['] living standard, [it] also refers to the living surroundings protection. In this changing world, multifunctional grassland ecosystems will increasingly display their contribution and function towards agricultural production and ecosystem service.

"The IGC/IRC is the premier forum for world grassland scientific problem. Under the support of Chinese government, The Chinese Grasslands Society successfully bid for the 21st International Grassland Congress and the 8th International Rangeland Congress: it is the first time that IGC and IRC will be coordinately hosted on 29th June to 5th July, 2008 in Hohhot, China" (Hong et. al., 2008).¹⁷

The Opening Session of the Congress was chaired jointly by Gavin Sheath, Chair IGC Continuing Committee, and Jim O'Rourke, President IRC Continuing Committee. Dr.



From left to right: Jim O'Rourke, President, IRC Continuing Committee; Gavin Sheath, and Vivien Allen -Chair and past Chair of the IGC Continuing Committee. (Provided by Professor Deng Bo.)

Sheath informed the Congress that the Opening Address would be presented by the two Chairs along with Vivien Allen, the Past Chair of the IGC Continuing Committee: "Given the of uniqueness this ioint Grassland International and Rangeland Congress, it is fitting that the Chairs of these two organizations give their opening address jointly. It is also appropriate that the events and actions that have led to this joint event are recorded."

Thus, it was that the Opening Address – "BUILDING BRIDGES: GRASSLANDS TO RANGELANDS" — was presented by these three individuals who had been closely involved with working through the opportunities and challenges of bringing these

¹⁷ Translation from the original in Chinese by Dr. Song Cui, Associate Professor, School of Agriculture, Middle Tennessee State University, Murfreesboro, Tennessee, USA.

two Congresses together in a venue in China (Excerpts from the Address follow below: <u>Appendix C-21</u> for full address).

"Over time, research and development in our global grazing lands has evolved into highly specialized areas. A reductionist emphasis has led to the understanding of underlying functions and mechanics of grazing lands. This has underpinned increased productivity and product quality in pasture and harvested forages. In contrast, work in rangeland ecosystems has been more oriented towards integrative ecology and sociology. This difference in emphasis led to the separation of the International Grassland Congress (IGC) and the International Rangeland Congress (IRC) in the 1970s.

"Ironically, since then many common areas of interest have emerged in environmental and social concerns, ecology, and multifunctional uses of our grazing lands. Increasingly, new bridges are needed to provide interaction and synergy between those people working in rangelands and grasslands.

"As we address the urgencies of global warming, a growing global population that demands higher living standards and a better diet, social stability, alternative energy sources, and protection of our environment and natural resources, we increasingly turn to our global grazing lands resources to find solutions. New bridges have brought together the IGC and the IRC for the first time in history in Hohhot, Inner Mongolia in the Peoples Republic of China. Perhaps history will look upon this as the stimulus for new collaborations that will lead ultimately to solving these grand challenges" (O'Rourke et al., 2008).

In order for the specific business of the International Grassland Congress and the International Rangeland Congress to be carried out, the Opening and Closing Business Sessions were held separately for the two Congresses.

The Opening IGC Business Meeting was chaired by Gavin Sheath, Chair of the IGC Continuing Committee. He emphasized how valuable it had been working with the International Rangeland Congress and the China Organizing Committee.

Dr. Sheath provided an update on Resolutions passed at the XX IGC in Ireland as follows:

Regarding stimulating strong delegate attendance from all developing countries, "international sponsorship of 360K US\$ was obtained for supporting Developing Country delegates at this Congress. The great effort of Jim O'Rourke (IRC President) in gaining international sponsorship must be acknowledged."

Regarding the Resolution requesting that a permanent IGC website be established, ""Such a site was launched in 2006 and has been overseen by Professor Guy Allard (Continuing Committee member - Canada). The efforts of Guy and Dr. Raul Vera

(Continuing Committee member) in establishing the site must be acknowledged. The Crop Science Society of America has provided the technical service for this website." Regarding progress on revision of Terminology for Grazing Lands and Grazing Animals, this has not been completed, but "terminology statements have been included in the *People & Policy in Rangelands* book that was provided in the IGC-IRC registration bag."

Through discounted registration and delegate support, student delegates (237) were encouraged to attend the Congress.

Regarding concerns about decreasing funding for research and development in and for developing countries, "the IGC chair communicated his concern to FAO and notes that FAO is listed as a Supporter of IGC-IRC in 2008."

The venue for the XXII IGC in 2013 was announced. It will be held in Sydney, Australia. Emphasis will be on grasslands in Southern Australia. The theme will be *Revitalising Grasslands to Sustain Our Communities*.

At the Closing Business Meeting, IGC Chair Gavin Sheath acknowledged the deaths of John Frame (UK) and Len 't Mannetje (Netherlands), both long-standing participants in the IGC. These men made significant contributions to grassland research and management.

Resolutions expressed sincere thanks to all who had contributed to the success of this first shared Congress between the IGC and the IRC and to all who made possible this first venue in China and Inner Mongolia.



Jim O'Rourke chairs a plenary session at the Congress. (Provided by Professor Deng Bo.)

Resolution 3:

"The members of the XXI IGC recognize and thank the members and leadership of the VIII IRC for the opportunity to work together in this first joint meeting of these congresses and proclaim that this joint meeting has been a success in achieving our common objectives and interest."

Assessing the Impact of Hosting the Congresses

At our request, Professor Nan Zhibiao, Vice President and Chair of the Scientific Committee, and Professor Zhou He, Secretary General of the Organizing Committee, commented on the impact of hosting the Congress in China. Their comments are as follows:

A key accomplishment was the recognition of grasslands by the public and at all levels of the government. Mr. Hui Liangyu, Vice-Premier of the Central Government of China, sent his letter of congratulations to the Congress. Leaders of the Inner Mongolia Autonomous Region and the Ministry of Agriculture attended the Congress. The news media reported continuously on this event. Thus, government officials at all levels as well as the public were better able to understand the importance of grasslands. The hosting of these two International Congresses increased opportunities for young scientists to meet internationally known scientists, form networks for international cooperation and to exchange information. The Congress was a very good opportunity for young scientists to gain experience in presenting their research on an international stage and to provide a unique opportunity for them to meet with scientists from all over the world. Since then many more Chinese scientists have been invited to the various committees of international organizations and to serve as members of editorial boards on grassland related journals.

Since the Congress, the Central and Provincial governments in China have continuously increased funding to support grassland research in contrast to many countries in which grassland funding is decreasing. This has resulted in a 172% increase (between the time of the Congress and 2019) in research papers authored by Chinese scientists and published in international journals.

The number of research and education personnel has developed rapidly in China with the number of Colleges of Grassland Sciences in Chinese Universities increasing from 4 to 10 since the Congress. Of particular interest has been the promotion of research team development.

The XXII Congress, Sydney, Australia - 2013

The XXII IGC marked the third time that the Congress convened in Australia. The first



Professor David Kemp. President of the XXII (Provided by David Kemp.)

was at Surfers Paradise (XI Congress 1970). The second took place as a shared Congress with New Zealand (XVII Congress 1993) with the Australian component in Rockhampton, Queensland. The third and current occasion took place in Sydney, Australia, on 15 to 19 September 2013, with the theme, *Revitalizing Grasslands* to Sustain our Communities. Papers presented addressed three sub-themes (<u>Chapter 3, page 116 to 117</u>). This was the first time the IGC had been held in southern Australia. Professor David Kemp (New South Wales, Australia) was President.

Approximately 800 people from 63 countries attended this Congress. The Proceedings of the XXII Congress International Grassland Congress. reported that 696 Plenary, Keynote, Oral, and Poster papers were presented and were included in the 2,080-

page Proceedings. More than 200 of these were spoken presentations. The Proceedings provide a "record of the current state of knowledge of grasslands in 2013" (Kemp and Michalk, 2013).

Concerns regarding reduced investment in grassland research in most countries resulted in a determined and focused effort at this Congress to empower the next generation of grassland researchers to attend [Early Career Researchers (ECR), age 35 years or younger]. Thus, a particular effort for this Congress was aimed at encouraging and providing financial support to ensure attendance from developing countries and by young grasslanders from around the world. Parts of the XXII Congress were designed specifically to meet the needs of younger participants, maximize their opportunities to present papers and contribute to discussions, and to link them to global networks of their peers, thus, delivering to them lifelong benefits. A key to achieving these goals was to enlist help from sponsors and employers in the form of financial assistance to these young researchers. The total ECR delegation, around 200, was supported by this multi-organization effort. "The main benefit delivered to each trainee was a new, global network of peer researchers including well-established Australian scientists. While it is very difficult to quantify such benefits, our own experience suggests that the lifetime research careers of the trainees will be strengthened, and that various kinds of beneficial research collaboration will ensue" [R. J. Clements (Australia), Personal Communication].

Pre- and post-Congress Satellite Meetings and tours were organized with several of these held jointly with other organizational meetings. Over 200 people took part in one or more of these Satellite Meetings, which included Forages in Mediterranean Systems, Western Australia; Tropical Legumes and the Beef Industry in Northern Australia, North Queensland; Temperate Grasslands in Tasmania - Diversity and Management, New South Wales (NSW); Grasslands Unlimited - A Taste of NSW and Canberra; Plant Adaptation to Drought and High Temperature, Sydney University; IV International Symposium on Forage Breeding, Victoria; 2013 International Herbage



Professor David Michalk, co- author of Revitalizing Grasslands to Sustain our Communities. (Provided by David Kemp.)

Seed Group Workshop - R&D Adoption by Seed-Growers - Making Good Science Work on the Farm -Methven, New Zealand; and 2013 Spatially Enabled Livestock Management Tour and Symposium, University of New England, Armidale, then University of Sydney, Camden.

In a Foreword to the Congress, Professor David Kemp (Australia) and Professor David Michalk (Australia) addressed the Congress, saying "Grasslands are the dominant ecosystems in many countries, either remaining as resources for grazing, watershed and biodiversity conservation or now being used for crop production, often with a grassland phase. Grasses and associated species sustain landscapes, ecosystems, livestock and communities across the globe. Many of the world's cereals are grasses. The future of humankind depends deeply on understanding, managing, and

sustaining grasslands" (Kemp and Michalk, 2013; <u>Appendix C-22</u>).

Professors Kemp and Michalk emphasized that "The Congress aimed to encourage and support revitalisation processes in terms of:

- Enhancing the traditional role of grazed grasslands in sustainable food and fibre production;
- Shaping grasslands towards new environmental and community roles in response to climate and water imperatives as well as the traditional production and sustainability objectives;
- Encouraging more young scientists, in Australia and across the world, to become involved in addressing the issues of multiple goals in grassland management; and,
- Closing the gap between developing and developed nations in grassland science and management."

Plenary Papers highlighted many current concerns and topics, including feeding the World in 2050, a changing climate, sustainability and productivity imperatives of the future, and if intensification can lead to sustainability. The title of the paper *Australian Grasslands Research at the Crossroads* (Robson, 2013) could certainly be elaborated to *Global Grasslands Research at the Crossroads*.

Delegates were invited to participate in a survey conducted by Sue Boschma (New South Wales Department of Primary Industries, Tamworth) to provide insight into the state of grasslands worldwide and urgent requirements for grassland research. Some 260 responses were obtained from 44 countries, with most from Australia (35) and USA (20). The top four factors considered to be limiting productivity were overgrazing, declining fertility, weeds, and poor income from livestock (Table 1).

Торіс	% indicating a major concern ²	Торіс	% indicating a major concern ²
Overgrazing	47	Climate change	17
Declining fertility	45	Urbanisation	15
Weeds	43	Water erosion	12
Poor income from livestock	37	No suitable replacement species	11
Loss of valuable species	35	Not possible to replant species	9
Climate variability	34	Soil salinity	7
Cost of resowing	34	Wind erosion	6
Soil acidity	18	Others	11

Table 1. Main factors limiting grassland productivity expressed by delegates at XXII IGC held in Sydney in 2013.¹

¹From Boschma (2014), reprinted with permission of author.

² Respondents able to give multiple responses

Respondents were also asked to identify priority areas for research (again with the opportunity to give multiple responses). The top ten topics are given in Table 2 (following page).

Topic	% indicating a priority area ²	Topic	% indicating a priority area ²
Management of livestock production systems	66	Climate change adaptation	42
Soil-plant-animal inter- relationships, including nutrient and fertiliser management	63	Forage quality	38
Pasture, forage and grassland species development	46	Environmental services from grassland	38
Management of weeds	46	Reclamation of degraded grasslands	35
Managing integrated crop/livestock systems	43	Water use efficiency of grasslands	34

Table 2. Priority areas for grassland research expressed by delegates at IGC held in Sydney in 2013.¹

¹From Boschma (2014), reprinted with permission of author. ² Respondents able to give multiple responses

At the Opening Business Meeting, Guy Allard (Canada), Chair, introduced members of the Continuing Committee. He reported that Minutes of the XXI IGC Business Meetings in China are on the IGC website and, thus, were not published in the IGC-IRC 2008 Proceedings. An update was given on Resolutions passed at the XXI Congress. Included was **Resolution 8** as follows: "Delegates at the XXI IGC request that revision of the *Terminology for Grazing Lands and Grazing Animals* be completed by the end of 2009 and presented at the IX IRC in Argentina (2011) and the XXII IGC in Australia (2013)." This was accomplished, and Chairman Allard informed delegates that free access to this publication on the Web was jointly funded by the Forage and Grassland Foundation (USA), the International Rangeland Congress, and the International Grassland Congress (Allen et al., 2011).

Allard announced the successful bid from India to hold the XXIII Congress and that the next Congress would be in New Delhi in 2015. Emphasis would be on biodiversity and environmental protection. Guy Allard then announced to the delegates that Dr. David Miano Mwangi (Kenya) was the new chair of the IGC Continuing Committee. Dr. Mwangi represented Region XI (Africa excluding Region VIII). At the Closing Business Meeting, the following Resolutions, carried unanimously, included:

- **Resolution 5**: That the plenary presentations of future Conferences be recorded for wider distributions through the IGC website or simultaneous delivery.
- **Resolution 10**: That the IGC Continuing Committee establishes an advocacy strategy and capability with the mandate to keep grassland research a primary priority with governments, thereby making it easier for researchers to obtain funding.
- **Resolution 11**: Resolve that IGC continue the Early Career Researchers (ECR) Forum and explore a variety of capacity building activities including a preconference ECR workshop, international exchange programs, and other networking opportunities.
- **Resolution 12**: Given the demonstrated benefits of the joint IGC-IRC 2008 meeting in China and considering the worldwide decreasing number of researchers as well as funds available for research in grassland and rangeland, the members of the XXII IGC recommend that, given a viable equal partnership between IRC and IGC, future IGC Continuing Committees make every endeavor to conduct joint activities with the IRC in order to maximise synergies in knowledge, practice, and resources.

The XXIII Congress, New Delhi, India - 2015

The XXIII Congress was held on 21 to 24 November, 2015, and took place in New



Dr. P. K. Ghosh, President of the XXIII Congress in India. (Photo from Ghosh, 2015.) With the venue in New Delhi.

Delhi, India. Dr. P. K. Ghosh (India) was Chair of the India National Organizing Committee and President of the XXIII International Grassland Congress, and Dr. David Miano Mwangi (Kenya) was Chair of the Continuing Committee. About 800 delegates attended the Congress with about 600 of these from India. This was the first time that the Congress had met in Region IV, South Asia. At the XIII Congress (1977) in Leipzig, Germany, Professor S. C. Pandeya, the outgoing Chairman of the Continuing Committee, had expressed interest in holding the XIV Congress in his home country of India, but circumstances failed to allow this opportunity. His desire to see the

Congress come to India was fulfilled

The theme of this XXIII Congress was *Sustainable Use of Grassland/Rangeland Resources for Improved Livelihoods*. Invited and offered papers addressed five themes in the congress (<u>Chapter</u> <u>3, pages 117 to 119</u>).



Congress sessions, held 21 to 24 November,



Book prepared for the XXIII Congress

were preceded by three workshops on the morning of

Dr. David Miano Mwangi, Chair of the Continuing Committee representing Region XI. (Photo from Mwangi, 2015.)

20 November. The workshops included formal presentations as well as a final discussion period. Interesting features of the main program, beginning 21 November, were the inclusion of concurrent fora on *Farmers and Dairy Associations* and a *Farmers' Question and Answer Forum*. No pre- or post-Congress tours were held at this Congress.

A unique feature of this Congress was a book, *Grassland: A Global Resource Perspective* (Ghosh et al., 2015), produced specifically for this Congress and published by the Range Management Society of India. The book, a compilation of invited papers presented at the Congress, focused on I. *Grassland and Grazing Resource Appraisal*; II. *Grassland Development and Management*; III. *Grassland and Socio- economic & Policy Issues*; and IV: *Grassland and Environmental Issues.* The book highlights the foundational role of grasslands in supporting human activities and civilizations throughout history. It points out the role of grasslands in providing livelihoods for about one billion of the world's poorest people and in its production of about one third (1/3) of the global protein intake by humans through grazing-based livestock production. Also, the book addresses the urgency of developing sustainable approaches to grassland resource use at a global level.

A Souvenir Document on *Sustainable Use of Grassland Resources for Forage Production, Biodiversity and Environmental Protection, also published by the Range*

Management Society of India, was handed out during the Congress. In his introductory Message, Dr. S. Ayyappan, Secretary & Director General of the Department of Agricultural Research & Education, Indian Council of Agricultural Research, Ministry of Agriculture and Farmers Welfare, stated: "Grasslands, including sown pasture and rangeland, are among the largest ecosystems in the world and contribute to the livelihood of more than 800 million people.

"I invite active participation of all researchers, policy makers, farmers, entrepreneurs and students in the congress, as a platform for exchanging ideas, having intense brainstorming and sharing experiences, that would aid in formulating useful policies for all



Souvenir Document published by the Range Management Society of India.

perspective improvement in grassland of world" (Ayyappan, 2015).

Dr. David Miano Mwangi (Kenya), Chair of the Continuing Committee and representing Region XI, welcomed delegates to the Business Meeting, held on 24 November, and thanked India for an excellent Congress, saying "On behalf of the IGC Continuing Committee, I take this opportunity to congratulate the Indian Organizing Committee led by Dr. P. K. Ghosh for putting together this Congress in such a short time. It is only 2 years since the Congress in Sydney and here we are in New Delhi. The team has put together a comprehensive programme both technical and social and for the next few days, a number of important issues will be discussed."

Dr. Mwangi introduced members of the Continuing Committee. Present were Dr. Ray Smith (Region I), Dr. Fernando Ibarra Flores (Region II), Dr. P. K. Ghosh (Region IV), Dr. Derek Woodfield (Region V), Dr. Claudio Porqueddu (Region VIII), Dr. Jean-François Soussana (Region IX), and Dr. Piotr Golinski (Region X). Regrets were forwarded from Dr. Rita de Cassia Riberio Carvalho (Region III), Dr. Nan Zhibiao (Region VI), and Dr. Hossein Barani (Region VII).

Dr. Mwangi presented Resolutions that had been passed at the previous XXII Congress in Australia. They included the suggestion that "given a viable equal partnership between IRC and IGC, future IGC Continuing Committees make every endeavor to conduct joint activities with the IRC in order to maximise synergies in knowledge, practice, and resources." The Congress in India was "expected to be a joint IGC/IRC congress, however, despite all efforts made this did not materialize." However, Dr. Mwangi announced that Kenya will be the venue for the XXIV Congress and that the IRC has been invited to join the IGC in a shared Congress.

No Constitutional Amendments were received prior to the 6-month deadline preceding the Congress; thus, there were no suggested changes to the Constitution. Dr. Garry Lacefield (USA) updated delegates on the *International Terminology for Grazing Lands and Grazing Animals* that is jointly supported by the IGC, the IRC, and the Forage and Grassland Foundation. This was published in 2011 (Allen et al., 2011) in *Grass and Forage Science* and has now been translated into French, Spanish, Chinese, and Japanese.

At the Close of the Business Meeting, the Resolutions Committee, composed of Dr. Claudio Porqueddu (Italy), Dr. Derek Woodfield (New Zealand), Dr. David Miano Mwangi (Kenya), and Dr. Ray Smith (USA), presented 10 Resolutions for discussion and approval. All were approved unanimously.

Resolution 1 congratulated the Indian Organizing Committee for putting together an excellent Congress and thanked the sponsoring organizations for their financial and in-kind support. The Organizing Committee was especially commended for publishing *Grassland: A Global Resource Perspective* that will be a "foundation text on the world's grassland resources for many years to come."

Resolution 5 asked that the ten dollars (10 US\$) per attendee earned during the Congress (starting with the XXI IGC) should be provided to the IGC Continuing Committee to be startup funds for the next Congress and to support early career researchers attending the Congress. This action has been implemented for the XXIV Congress in Nairobi, Kenya for 2020 and will be carried forward as operating procedure.¹⁸

¹⁸ As a point of clarification, the practice of collecting 10 US\$ per delegate began at the XXI Congress in China to be consistent with the International Rangeland Congress' practice. This was to be used as "start-up funds" for the following Congress. The XXII Congress in Australia and the XXIII Congress in India followed this practice as well.

Resolution 7 supported the continuation of the Early Career Researchers (ECR) Forum that had begun in Australia (XXII). It also supported including ECRs as keynote speakers.

Resolution 8 again supported the demonstrated benefits of a joint IGC-IRC Congress and encouraged every effort "to continue joint activities to maximize synergies in knowledge, practice, and resources."

Resolution 9 requested that the Continuing Committee commission a study on the *Global Future of Grasslands*.

Resolution 10 suggested that the Congress pursue having its Proceedings approved by Thompson Reuters to be listed in Conference Proceedings Citation Index and designated with an ISBN number.

Dr. Mwangi informed delegates of the initiative for a United Nations designation of the year 2020 as International Year of Rangelands and Pastoralists. Efforts to accomplish this had begun as early as 2008 in Hohhot, China at the International Grassland Congress/International Rangeland Congress, with FAO taking the first steps in beginning the process. At the International Rangeland Congress in Argentina in 2011, Resolutions called on the UN General Assembly to launch an International Year of Rangelands. The Society for Range Management (SRM), The Rangelands Partnership (a collaboration of 19 Land-Grant Universities in the USA), and the International Rangeland Congress (IRC) combined efforts to support the initiative that requested 2020 be designated as the International Year of Rangelands and *Pastoralists.* The International Grassland Congress had also agreed to work together to support naming and implementing this objective. Dr. Ray Smith, Continuing Committee Member (Region I), had advocated for grasslands to be included in the Initiative, but the consensus was that the message needed to be succinct and that the formal definition of Rangeland included grasslands.¹⁹ The International Grassland Congress is providing appropriate mutual support (Ray Smith, Personal Communication).²⁰

At the Closing of the XXIII Congress, Dr. Mwangi announced that "Dr. Ray Smith (USA) has graciously agreed to be the next Chairman of the IGC Continuing Committee. Dr. Smith, a Professor at the University of Kentucky, represents Region I (Canada and

¹⁹ Definition of Rangelands used by the initiative: "Land on which the indigenous vegetation is predominantly grasses, grass-like plants, forbs or shrubs that are grazed or have the potential to be grazed, and which is used as a natural ecosystem for the production of grazing livestock and wildlife" (Allen et al, 2011).

²⁰ Arizona Board of Regents (2020). "International Year of Rangelands and Pastoralists Initiative." Global Rangelands, retrieved 30 August, 2020, from https://globalrangelands.org/international-year-rangelands-and-pastoralists-initiative.

USA). Please join me in welcoming Dr. Smith as chairman of the IGC Continuing Committee."

Postscript to This Congress

Follow up discussions regarding designation of an "International Year of Rangelands and Pastoralists" continued during the United Nations Environment Assembly (UNEA) Conference in Nairobi, Kenya, in 2016 after the IGC Congress in New Delhi took place. The year 2020 was not adopted, but ongoing efforts continued and a Resolution supporting *Sustainable Pastoralism and the Responsible Consumption of Livestock* was successful. The Mongolian Government presented a request for an International Year of Rangelands and Pastoralists designation for 2026 at an open session of the October 2018 FAO Committee on Agriculture (COAG) meeting in Rome. The proposal will be considered by the UN General Assembly in October 2021.

Involvement by the IGC in support of this ongoing effort has been given by Ray Smith, current Chair of the IGC Continuing Committee, throughout this period. The IGC will continue to provide strong support to the IRC for this mutually important initiative.

The XXIV Congress, Nairobi, Kenya - 2021

The XXIV International Grassland Congress and the XI International Rangeland Congress was to be held jointly 24 to 30 October, 2020. P. S. Harry Kimtai, State Department of Livestock, Ministry of Agriculture, Livestock, Fisheries, and Irrigation would serve as President of the Congress.

This was to be the second time that these two Congresses would come together in a shared venue. Kenya offers exciting and valuable opportunities to view diverse and unique rangeland and grassland systems. The theme of *Sustainable Use of Grassland and Rangeland Resources for Improved Livelihoods* was selected for this Congress. Within this thematic arena, the focus would be on *Grassland/Rangeland Ecology, Forage Production and Utilization, Livestock Production Systems, Wildlife, Tourism and Multi-facets of Rangeland/Grasslands, Drought Management and Climate Change in Rangelands/Grasslands, Pastoralism, Social, Gender, and Policy Issues, and Capacity, Institutions, and Innovations for Sustainable Development in Rangelands/Grasslands.*

Planning was proceeding on schedule when early in 2020, the World began to realize that the Coronavirus disease (Covid-19) was becoming an international pandemic. Unprecedented actions have been implemented globally to combat this disease.

Thus, for the second time in its History, the International Grassland Congress has been forced to postpone its Congress. The first time was due to the outbreak of World War II. This time the war being fought is against a virus that is threatening the economic stability of nations and the health of their citizens around the world. Due to these international circumstances, the decision was made to postpone the XXIV Congress until this pandemic has been brought under control. Thus, the following announcement was released:

3 April, 2020

The Joint International Grassland and International Rangeland Congress Secretariat Office Kenyatta International Convention Centre, Nairobi, Kenya.

The National Organizing Committee, together with the International Grassland and Rangeland Organizing Committees, would like to express sincere thanks for the great interest and support you have shown towards the Joint XXIV IGC and XI IRC Congress. More than 1000 abstracts have been received and reviewed and the process of full paper submission is on-going.

However, based on the current worldwide situation with the Coronavirus (COVID-19) pandemic and measures taken by many countries to minimize effects of this virus, the National Organizing Committee, in consultation with the International Organizing

Committees has decided to postpone the joint XXIV IGC and XI IRC Congress by a period of one year. This difficult decision has been taken after consideration of all available information from the WHO (World Health Organization) and various country ministries of health, and the international travel bans, and in some cases complete lock down. Registration to the Joint XXIV IGC and XI IRC Congress remains open.

The Congress is now scheduled for 23 to 29 October, 2021, at the same venue - The Kenyatta International Convention Centre, Nairobi, Kenya.

The National Organizing Committee would like to clarify the following:

- All abstracts which have been accepted will continue to be processed, and full paper submission process will continue to take place. The new deadline for paper submission will be announced soon.
- For those who have already paid for registration/tours, their payments will remain valid until we hold the Congress.
- Concerning accommodation, delegates are advised to contact the hotels directly for alternative arrangements as per the respective hotel's policy.
- For questions regarding abstracts and full paper submissions, or any other concern, please contact the Congress Secretariat by email at: <u>kenya2020-igc-irc@kalro.org</u> and <u>kenya2020igcirc@gmail.com</u>

The National Organizing Committee apologizes for any inconvenience caused by this postponement due to factors beyond its control.

"Grassland science, which is deeply connected to food production, land utilization, and environmental conservation, is charged with the heavy responsibility of being a science for human existence."

Dr. Iwao Nikki, President of the XV Congress, Kyoto, Japan (Nikki, 1985)

Chapter 3 Topics and Content of the Congresses

Topics Featured in Opening Addresses to the International Grassland Congress

From the first meeting, the Proceedings include at least one opening presentation, generally by the Congress President, with contributions sometimes also being made by the Chairman of the Continuing Committee and by a visiting dignitary, such as a Minister of Agriculture.

These presentations indicate areas of concern and challenge at the time of the Congress. With the narrow geographical representation at the first three Congresses, it is not surprising that the introductory papers reflected regional issues and the opportunities that the fledgling Congress presented for the exchange of views and experiences. At later Congresses, with more delegates from countries around the world, global issues became more heavily featured.

The need to produce more food to recover from the ravages of War was featured strongly by S. L. Mansholt (Minister of Agriculture, Food and Fisheries) in the Netherlands in 1949:

"More serious, however, was the great damage caused by violence and evacuation, leading to devastation and dilapidation of farms, but the greatest loss was by inundations. Over 10% of the cultivated area in the Netherlands has been flooded, one third of this by salt water."

The need for increased food production was a continuing theme because of increasing world population.

With grassland occupying so much of the world's surface, it has a key role to play in increasing production of milk and meat. Opening speeches expressed concern for research needed to increase herbage production and to improve utilization both by grazing and by forage conservation. In early presentations, there was much attention given to use of manures and fertilizers and to contributions that could be made by plant breeding, use of legumes, and improved grazing management. S. L. Mansholt in the Netherlands in 1949 reflected that

'The improvement of grassland yields up to the present is mainly due to better manuring, but there are other ways of increasing them, affording many openings for further research and experimentation in order to attain higher gross yields, and also to acquire higher profits from these yields."

The importance of legumes had been highlighted by R. G. Stapledon (President) in the UK in 1937:

"No grassland is worthy of the name, and indeed is hardly worth bothering with, unless the legume is at work. Make the conditions suitable for the legume and manage the sward to favour the legume as well as to feed the animal, and everything else will be easy – the battle will be won."

He further reflected on the problems of grassland management:

"The outstanding feature of grassland is its complexity..... Soil, climate and the grazing animal. Which of these three is the most important factor? Most emphatically the grazing animal! Manure right, sow right and manage the grazing animal wrong and you are nowhere. Without the grazing animal there would be no grassland worthy of the name anywhere in the world."

It has long been realized that low nutritive value of grassland feeds may limit animal production, and the need for improvement was registered as early as the Congress in the UK in 1937. Concern about the large amount of grain being used for feeding livestock whilst it could be fed directly to the increasing human population was expressed by I. Nikki (President) in Japan in 1985:

'The importation of a huge tonnage of feed grains has become more general and has been increasing year by year. Japanese self-sufficiency has decreased from 82% to 33% during the past 20 years. Such importation of grain may be considered a serious problem not only from the viewpoint of world food supply but also from a domestic viewpoint."

The effects of grassland farming on the environment were barely mentioned in the introductions to early Congresses. The initial concern was for the protection of land and water resources, with this being featured by C. F. Brannon (Secretary of State) in USA in 1952 and by Sir Willoughby Norrie (Governor General) in New Zealand in

1956. From the mid-70s, increased concern on the need to prevent water and air pollution in more intensive systems was a focus in practically all opening papers. Similarly, concern for biodiversity and the maintenance of ecosystems was featured initially in 1981 in the USA and then in most introductory presentations in this Century. Effects of climate change were first mentioned by D. G. Crespo (Chair, Continuing Committee) in New Zealand in 1993:

"We are looking for different plants to improve the environment that has been spoiled through the prodigious use of fossil energy. Today we are wondering how to stop or reverse climate change. Can grasslands do anything to solve this problem? I believe they can and I'm sure their contribution will involve much wider use of legumes in grassland systems."

Not surprisingly, the need for more research was featured frequently. Particular stress was given by W. Davies in 1966 on the need for increased grassland research in the tropics and sub-tropics. W. Davies (Vice President) said the

"Grasslands in sub-arid regions had received little or no attention in the tropics until work recently began in Queensland. He commended this work to all those who live and work on tropical environments."

This point was returned to in 2015 by P. K. Ghosh (Chair, National Organizing Committee):

"Knowledge is often lacking, particularly for tropical grasslands, including Indian grasslands. The knowledge that is available from the much more extensive studies of temperate grasslands often cannot directly be applied to tropical grasslands. Developing appropriate management strategies for tropical grasslands is challenging, keeping in view the diversity of agroecological systems/regions, the animal production constraints and soil-plantanimal interactions."

The contributions that the Congresses have made to improving communication among grassland scientists was recognized in many contributions, but so was the difficulty in achieving effective translation of research into practice. J. Picard (President) in 1989 suggested that the new approaches of modelling and systems synthesis had important roles to play in this context.

There was a strong focus in the introduction of R. F Barnes (President) in USA in 1981 on the role that the IGC could play in establishing unified grassland terminology and on the relationship between the IGC and the International Rangeland Congress. These aspects are discussed in other sections of this book.

These brief highlights illustrate that some of the issues relating to grassland production and utilization that were featured in the early meetings have remained

important for the near 100-year span of the IGC. Other issues have been added, with increased concern for the effects of intensive grassland farming on the environment and the need to mitigate or adapt to climate change. The Opening Addresses have rightly paid tribute to the importance of the IGC in bringing scientists from throughout the world together, improving communication and contributing to the rapid sharing of ideas and knowledge. This has facilitated increased contributions of grassland to the well-being of humankind and our planet.

There have been many perceptive comments made at the Congresses by Congress Presidents, chairs of the Continuing Committee and invited dignitaries. We include in <u>Appendix N</u> one such comment from each of the 23 Congresses.

Content of Congresses from 1997 to 2015

This analysis updates the description given by Humphreys (1997) of the content of Congresses from 1937 to 1993.

XVIII International Grassland Congress, Canada - 1997

B. R. Christie, Congress Chair, paid tribute to the International Grassland Congress as being a forum where delegates can discuss the performance of plants and animals and their interactions with the soil, environment, economics, climate, etc. He noted that the subjects presented had become more varied and broader, representing the diverse nature of the topic and the multidisciplinary requirement for its study. He pointed out that grasslands are important not only for food production in the future but for ensuring stability of production. Social scientists, physical scientists, economists, and the society at large will be required to deliver an appropriate and effective research agenda.

The Congress program was constructed to deal with these diverse issues. There were three major sections, entitled *Plants, Animals*, and *Grasslands*, each with ten themes.

The themes in **Plants** were (1) Conservation, Evaluation, and Utilization of Plant Resources, (2) Conventional and Novel Methodologies for Plant Improvement, (3) Plant Physiology and Growth, (4) Soil Fertility and Plant Nutrition, (5) Constraints on Forage and Grassland Production, (6) Forages for Land Reclamation and Rehabilitation, (7) Forages in Cropping Systems, (8) Forages and Grassland Management, (9) Seed Production and Management: Temperate, and (10) Seed Production and Management: Tropical.

Considerable progress was reported in the development and use of molecular techniques in plant breeding, but several papers detailed important contributions from the use of plant collections and databases. Progress was reported in breeding grasses for increased nutritive value, particularly digestibility, and approaches were outlined for the use of grazing animals in plant breeding programs. New diagnostic tools and models have increased our understanding of transformation of nutrients, particularly nitrogen, in grassland systems; those new diagnostic tools and models facilitate increased precision in fertilizer use, which benefits economic efficiency and reduces the risk of environmental pollution.

The themes in *Animals* were (1) *Animal Intake and Grazing*, (2) *Foraging Strategy*, (3) *Tannins: Plant Breeding and Animal Effects*, (4) *Constraints on Animal Production from Forages and Grasslands*, (5) *Post-Harvest Management*, (6) *Forage Quality*, (7)

Nutrient Cycling, (8) Grasslands in Arid and Semi-Arid Regions, (9) Grazing Systems Ecology, and (10) Grazing Management.

Papers reported progress in understanding grazing behavior and identifying sward and animal factors affecting selection and preference and, thus, determining animal performance and sward composition, particularly with grass-legume mixtures. Parasites are a significant limiting factor to animal production, and considerable attention was given to the beneficial effects from plant secondary compounds, particularly tannins, in controlling parasites and enhancing nutritive value.

The themes in **Grassland** were (1) Alternative Uses of Forages, (2) Agroforestry, (3) Climate Change: Implication and Role of Grasslands, (4) Biodiversity, (5) Extensification with Grasslands, (6) Communal Grazing Lands, (7) Temperate and Tropical Native Grasslands, (8) Technology Transfer, (9) Integration of Environmental and Agricultural Policy, and (10) Social and Economic Aspects of Grasslands.

Silvo-pastoral systems were highlighted, particularly for semi-arid areas, with papers reporting the effect of trees on the performance of grazing animals and of grazing on tree growth. The research reported on climate change was concerned mainly with the effects of elevated levels of carbon dioxide on forage production, but consideration was also given to methane emissions and effects on the prevalence of plant diseases.

The development of electronic communication, the worldwide web, and decision support models were forecast to have large effects on technology transfer, whilst participatory approaches help determine an appropriate research agenda and facilitate the adoption of the newly developed technologies.

A total of 1,098 papers were presented, with 549, 349, and 192 in the sections on *Plants, Animals,* and *Grassland,* respectively— three in the Introductory Session and five in the Farmers' Forum.

XIX International Grassland Congress, São Pedro, São Paulo, Brazil - 2001

The Congress program was constructed to deal with major issues relating to grassland systems in diverse climatic situations, with full coverage of tropical grasslands. The 33 sessions or sub-themes can be grouped into those focused on (1) *Grassland Plants and Forage Production*, (2) *Utilization and Nutritive Value*, and (3) *Systems and Policies. Grassland Plants and Forage Production*: There were 14 sub-themes dealing with (1) *Ecophysiology of Grasslands*, (2) *Grass-Legume Mixtures*, (3) *Seed Production*, (4) *Soil Fertility and Plant Nutrition*, (5) *Biotic Constraints to Forage Production*, (6) *Abiotic Constraints to Forage Production*, (7) *Forage Breeding and Genetics*, (8) *Plant Improvement*, (9) *Advances in Forage Legumes*, (10) *Advances*

in Rhizobial Research, (11) Advances in Endophyte Research, (12) Opportunities in Molecular Biology, (13) Grassland Degradation, and (14) Climate Change.

Areas of particular focus in the session on ecophysiology were morphogenesis and tiller development in relation to grazing, the significance of carbohydrate reserves, and responses to water stress. The sessions on plant resources reflected progress in molecular biology through the use of marker-assisted selection and transgenics. Components of nutritive value, particularly digestibility, had become significant objectives in conventional breeding programs. Research on grassland degradation dealt principally with desertification and the potential of agroforestry. There were only two papers on climate change (these focused on effects of enhanced carbon dioxide on plant growth), and only one paper dealing with carbon sequestration.

Utilization and Nutritive Value: There were eight sub-themes dealing with (1) *Foraging Strategy*, (2) *Grazing Ecology*, (3) *Forage Quality*, (4) *Animal Comfort*, (5) *Biological Constraints to Animal Production from Grassland*, (6) *Use of Supplements*, (7) *Forage Conservation*, and (8) *Grazing Management*.

Papers on grazing focused on grazing behavior, including diet selection and effects on sward composition, and the effects of the spatial distribution of herbage on components of intake, such as bite mass and bite depth. Positive and negative effects from secondary plant compounds were featured, including the possible provision of natural anthelmintics. Research on forage conservation was mainly concerned with silage and reported on the ensilability of a wide range of forages and responses in feeding value to additives, including cellulases and ammonia.

Systems and Policies: The 11 sub-themes dealt with (1) *Agro-Silvo-Pastoral Systems,* (2) *Forage in Cropping Systems,* (3) *Biodiversity,* (4) *Deforestation,* (5) *Dynamics of Land Use in Grasslands,* (6) *Deintensified Grasslands,* (7) *Issues Relating to Land Tenure,* (8) *Socio-Economics of Pastoral Development,* (9) *Grassland Production and Trade Issues,* (10) *Use of Information and Analytical Systems,* and (11) *Technology Transfer and Education.*

Agro-silvo-pastoral systems were considered to have much potential for giving efficient use of resources, and papers considered effects of canopy structure and light competition in these systems. There were a substantial number of papers on biodiversity. These considered the effects of management, fertilizers, and grazing on the diversity of plants, animals, and soil microbes. Techniques for remote sensing of vegetation were featured, and examples of models and decision support systems facilitating technology transfer and the development and adoption of improved management systems were given.

There were two invited papers with up to 50 offered papers in each sub-theme. These were presented either orally or as a poster. The total number of papers was 207 for *Grassland Plants and Forage Production*, 195 for *Utilization and Nutritive Value*, and 99 for *Systems and Policies*. With two papers in the Introductory session and a landmark final paper by L. R. Humphreys on International Grassland Congress Outlook – *An Historical Review and Future Expectations*, there were 504 papers in total.

XX International Grassland Congress, Ireland, and UK - 2005

Invited and offered papers at the Main Congress related to three topics, (1) *Efficient Production from Grassland*, (2) *Grassland and the Environment*, and (3) *Delivering the Benefits from Grassland*, with several sessions in each topic.

Efficient Production from Grassland: The sessions were entitled (1) *Grass and Forage Plant Improvement,* (2) *Animal Production,* (3) *Improving Quality of Products from Grassland,* (4) *Grass and Forage Physiology,* (5) *Forage Quality for Animal Nutrition,* (6) *Impacts of Endophytic Fungi and other Biotic Interactions on Grassland Production,* (7) *Advances in Sown Tropical Legumes,* (8) *Grassland Management,* (9) *Integrated Production Systems,* (10) *Industrial Products from Grassland,* (11) *Grass and Forage Agronomy,* (12) *Overcoming Seasonality of Production,* and (13) *Animal-Plant Relations.* Some 458 papers contributed to this theme.

The invited papers considered the issues relating to the rising demand for meat and milk, particularly in developing countries, and the potential for forage-based systems to satisfy this demand. There was special emphasis on tropical grassland to follow up on the presentation by John Miles at the previous Congress in which he had concluded that breeding tropical pasture species was a record of failure (Miles, 2001). His paper led to a global survey to assess the adoption of sown tropical legumes. The results of that survey were presented at this Congress (Shelton et al., 2005). Progress was clearly being made, and many success stories were reported, particularly with *Stylosanthes, Leucaena*, and *Arachis*.

This attention to tropical grasslands was complemented by consideration of the rather different problems in the more developed affluent world where extensification and meeting environmental targets whilst maintaining a viable ruminant production system had become a major issue; research on the use of grass in biofactories and for fiber, biomass, and energy production was presented.

Much attention was given to both conventional and molecular approaches to forage plant improvement. The sessions that attracted most offered papers related to forage quality and animal-plant relations. There was focus on digestion kinetics and the beneficial effects on the protein value of tannins and polyphenol oxidase. Advances were reported on the methodology for studying grazing behavior and the effects of sward structure on intake characteristics. Papers reported positive effects on meat quality from grassland-based systems associated with contents of fatty acids and conjugated linolenic acid.

Grassland and the Environment: The sessions were entitled (1) *Climate Change*, (2) *Greenhouse Gases*, (3) *Carbon Sequestration*, (4) *Biodiversity in Grassland*, (5) *Grassland and Water Resources*, (6) *Soil Quality and Nutrients*, and (7) *Multifunctional Grassland*. Some 213 papers contributed to this theme with Biodiversity in Grassland and Soil Quality and Nutrients attracting the most papers.

The research reported on climate change dealt particularly with the effects increased levels of carbon dioxide have on plant growth, models of climate change, and forecasts of impacts. Carbon balances for different grassland management systems were reported. Papers on biodiversity considered multi-species competition and the effects of grazing management on the diversity of plants, birds, and soil invertebrates, together with discussion on policies to increase biodiversity. Issues of responses to water stress and salinity featured strongly in the session Grassland and Water Resources.

Delivering the Benefits of Grassland: The sessions were entitled (1) Adoption of New Technology, (2) The Contribution of Participatory and on Farm Research, (3) Improved Livelihoods from Grassland, (4) Tools for Grassland Management, (5) Decision Support for Grassland Systems, (6) Participatory Research and Decision Support Systems, and (7) The Role of the International Grassland Congress and Grassland Societies in Technology Interaction and Influencing Policy.

A substantial proportion of the 159 papers dealt with tools for grassland management and decision support. Models of grass growth and changes in nutritive value, decision support systems, and satellite sensing assessments by near infra-red spectroscopy can all improve efficiency of grassland management, whilst it was stressed that farmer groups can be very effective in facilitating the development and adoption of new technology. Over 20 posters illustrated the approaches followed by Grassland Societies in providing links between research and practice and facilitating technology interaction.

The Satellite Meetings facilitated more detailed consideration of the following topics:

Optimization of Nutrient Cycling and Soil Quality for Sustainable Grasslands (Oxford, England).

Molecular Breeding for the Genetic Improvement of Forage Crops and Turf (Aberystwyth, Wales).

Pastoral Systems in Marginal Environments (Glasgow, Scotland). Silage Production and Utilisation (Belfast, Northern Ireland). Utilisation of Grazed Grass in Temperate Animal Systems (Cork, Republic of Ireland).

XXI International Grassland Congress and VIII International Rangeland Congress, China - 2008

In opening the Congress, Hong Fuzeng, Guo Qijun, and Yun Jinfeng referred to the huge ecology crisis created by humans over the last century by addressing global climate warming, grain safety getting more urgent day by day, energy resources sinking rapidly, the living conditions of humankind worsening, and biodiversity falling. They highlighted the importance of grassland (33.5% of the total land area) as a tremendous resource for humankind with various functions. Attention was drawn to grassland controlling soil erosion and preventing flooding and other natural calamities as well as its role in producing green safe food and contributing to tourism and culture.

This set the scene for the first joint IGC/IRC Congress. Not surprisingly, the program reflected the interests of the two Congresses, blending attention to cultivated grasslands with that of more extensive rangelands with a stress on multifunctionality in accordance with the overall theme of the Congress.

There were three themes in the program dealing respectively with resources and ecology, production systems, and people and policies. All themes were related to both grasslands and rangelands.

There were four plenary papers, 55 invited papers, and 1679 offered papers, surely a record for an IGC.

Theme A, Grasslands/Rangelands Resources and Ecology: Some 768 papers were presented with sections relating to (1) *Ecology,* (2) *Soil Quality and Plant Nutrition,* (3) *Soil-Plant-Animal Relationships,* (4) *Indicators of Sustainable Use and Conservation of Resources,* (5) *Application of Information Technology in Monitoring and Managing Resources,* (6) *Reclamation of Grasslands/Rangelands,* (7) *Water Resources,* and (8) *Climate Change and Impact.*

There was particular attention given to the responses of rangelands to grazing intensity and to fire, approaches to recover degraded rangelands through exploitation of seed banks, plant introduction, and prevention of grazing. The impact of grassland management on carbon sequestration was highlighted, as was the contribution that silvo-pastoral systems can make to carbon sequestration. Important contributions were made on the use of satellite imagery in association with GPS for assessing pasture composition, growth, and soil nutrient status.

Theme B, Grasslands/Rangelands Production Systems: There were eight sections dealing with (1) *Livestock Production Systems*, (2) *Integration of Crops, Forage, and Forest Systems*, (3) *Amenity and Conservation Turf and Turfgrass*, (4) *Developing Improved Plants*, (5) *Domestication of Native Grasslands/Rangelands Plants for Regional Use*, (6) *Seed Science and Technology*, (7) *Forage Quality, Conservation and Utilization*, and (8) *Integrated Management of Harmful Organisms of Grasslands/Rangelands*. A total of 747 papers were presented.

Papers on effects of grazing management, sward type, and supplements were reported using cows, sheep, goats, yaks, and camels. In addition to effects on feed intake and animal production, several papers examined effects on the quality of meat and cheese. While progress was reported on the use of genomics and markers in aiding forage breeding programs, there were contributions from many regions to the potential of native species, particularly legumes. Integrated crop-grassland-livestock systems and silvo-pastoral systems were featured giving improved use of energy and nutrients and contributing to carbon storage.

Theme C, Grasslands/Rangelands People and Policies: The theme attracted 219 papers. It had seven sections and a forum on Chinese Grassland and Rangeland. The sections were (1) People in Grasslands/Rangelands, (2) Policy Issues for Grasslands/Rangelands, (3) Land Use Change and Grasslands/Rangelands Tenure, (4) Institutional Innovations for the Conservation of Grasslands/Rangelands Biodiversity, (5) Non-Livestock Amenities of Grasslands/Rangeland Resources, (6) Market and Grasslands/Rangelands, Marketing for (7) Innovation Systems in Grasslands/Rangelands through Education and Practice, and (8) *China* Grassland/Rangeland Forum.

The consideration of the problems of common property rights and tenure issues, especially in rangeland situations, was a particular feature. There were analyses of traditional systems, and the importance of Indigenous knowledge was highlighted. Non-livestock products considered included biofuels, renewable energy, and pharmaceuticals, while distinctive higher value livestock products include fine fiber and the organic sector. The section on education and practice outlined some new approaches to education relating to grassland and featured the contribution of participatory approaches to grassland research and development.

XXII International Grassland Congress, Australia - 2013

The overall theme was *Revitalizing Grasslands to Sustain our Communities*. Invited and offered papers were grouped in three sub-themes:

Improving Production Efficiency to Revitalize Grasslands: This theme had 377 papers with major sections addressing (1) *Advances in Grass and Forage Physiology,* (2) *The Development, Use, and Impact of Improved Plants,* (3) *Livestock Production from Grasslands,* (4) *Forage Quality, Conservation, and Utilization,* (5) *Monitoring and Management of Grassland,* and (6) *Integrated Grassland Systems.* There were major contributions discussing moisture stress, salinity, and forage legumes. Consideration was given particularly to *Leucaena* in tropical areas, clover, lucerne and *Lotus* in temperate areas and the potential of native legumes. Attention was also given to the potential of native legumes. The session on *Adoption of Precision Management to Improve the Efficiency of Grassland-Based Livestock Production* was a first for the International Grassland Congress, and it paid particular attention to the assessment and modification of grazing behavior. Remote sensing was making an important contribution to monitoring and managing forage resources. Papers on integrated systems were concentrated on crop-grassland systems and silvo-pastoral systems.

Improving Grassland Environment and Resources: The major sections were (1) *Ecology of Grassland and Forage Ecosystems,* (2) *Climate Change and Impacts on Grasslands,* (3) *Management of Nitrogen and other Nutrients in Production Systems,* (4) *Plant Protection of Grasslands,* and (5) *Degradation, Reclamation, and Protection of Grasslands for Environment and Biodiversity.* The sessions on climate change were particularly strong with 62 of the 235 papers within this theme dealing mainly with the effects of elevated levels of carbon dioxide on plant processes, carbon sequestration, and greenhouse gas emissions. There were also major contributions on plant-animal interactions, concentrating on the effects that grazing management has on sward structure and composition and the assessment of grazing behavior and its effects on selection and intake rate. Papers on species diversity included the effects of management on the diversity not only of plants, but also of mammals, birds, and spiders.

Grassland People, Rights, Policies, Practices, and Processes: The major sections were (1) *Drivers for Change,* (2) *Achieving Change,* and (3) *Building Competence to Manage Grassland Challenges.* Although attracting only 66 papers, the Congress succeeded in drawing attention to these key elements in the development and adoption of new technologies. Examples were presented of demonstration farms, farmer-to-farmer mentoring, models, and electronic learning programs that all contribute to the adoption of new technology.
In addition to these sessions, two Forums were held — one for Early Career Researchers and one for Farmers.

The Satellite Meetings facilitated more detailed discussion on:

Forages in Mediterranean Systems (Albany, West Australia).

- Plant Adaptation to Drought and High Temperature (Sydney, New South Wales).
- *Forage Breeding* (Melbourne, Victoria; joint with IV International Symposium on Forage Breeding).
- *Herbage Seeds* (Methven, New Zealand; joint with International Herbage Seed Group).
- Spatially Enabled Livestock Management (Armidale and Camden, New South Wales).

XXIII International Grassland Congress, India - 2015

In opening the Congress, P. K. Ghosh, Chair of National Organizing Committee, said that "Perspectives and perceptions regarding the most appropriate roles and functions of grasslands have changed in the recent past. There are numerous regional, national and global issues with which utilization of grasslands are related. These include the function of grasslands to provide social and cultural needs for many rural societies, their role in reducing greenhouse gas emissions, as water catchments and the preservation of ecosystem diversity, but at the same time increased global demand for food must be met without much harm to these resources." The Congress Program addressed these issues with invited keynote papers and offered papers in five themes.

Grassland Resources: There were two sub-themes covering (1) *Dynamics of Grassland Resources – Global Database* and (2) *Global Monitoring of Grasslands.* Considerable attention was devoted to the development and use of remote sensing techniques that aid in the identification and characterization of grassland.

Grassland Production and Utilisation: There were nine sub-themes covering (1) Quality, Production, Conservation, and Utilisation, (2) Integration of Plant Protection to Optimize Production, (3) Soil-Plant-Animal-Human Inter-Relationship, (4) Water Management to Increase Grassland and Forage Production, (5) Validation and Dissemination of Traditional Knowledge, (6) Interdependence of Grassland and Arable Lands for Sustainable Cereal, Forage, and Livestock Production, (7) Seed Production, Storage, Availability, and Quality, (8) Grassland-Market Linkage, and (9) Alternative Uses of Tropical and Temperate Grasslands. The papers covered a very wide range of grasses, legumes, and forage crops that are grown in many diverse situations. There were particularly strong contributions relating to nitrogen management, grassland utilization by grazing, and silage and integrated systems, particularly including silvo-pastoral agroforestry.

Sustainability of Grasslands: Social and Policy Issues: There were five sub-themes covering (1) *Multi-Stakeholders Learning Platforms for Grassland Management,* (2) *Factors Affecting Grassland and Forage Resources,* (3) *Sustainable Use of Grassland Resources,* (4) *Improving Grasslands through Education and Practice,* and (5) *Policy Issues Related to Sustainable Grassland Production.* Particular emphasis was given to the need for partnerships between the various stakeholders in the development of improved systems of production from grassland and for different approaches for technology transfer.

Biodiversity, Conservation, and Genetic Improvement of Range and Forage Species: There was a single sub-theme, **Plant Genetic Resources and Crop Improvement**, with separate sessions on (1) Plant Genetic Resources, Collection, *Conservation, Evaluation, and IPR Issues,* (2) Breeding Cultivated Grasses for Biomass, *Quality, and Stress Tolerance,* (3) Breeding Range Grasses and Legumes for Biomass and *Stress Tolerance,* and (4) Biotechnological Approaches to Improve Range, Pasture, and *Forage Species.* During these sessions, considerable attention was given to the selection and improvement of species to use in water-stressed conditions.

Environmental Issues Related to Grassland: There was a single sub-theme on **Climate Change and Grassland Management**, but separate sessions on the (1) Global Role of Grassland Management in Mitigating Climate Change Effects on the Environment and Human Welfare, (2) Effects of Climate Change on Biodiversity, and (3) Emission of Greenhouse Gases from Grassland and Mitigation Options. Although papers dealt with emissions of methane and nitrous oxide and with carbon sequestration, there were surprisingly few papers relating to soil degradation and water quality.

Of the offered papers and posters, nearly half (48%) were associated with the theme *Grassland Production and Utilisation*, with many discussing grass and forage management and animal production, traditional areas of strength of the International Grassland Congress. Seventeen percent of presentations were for the theme *Sustainability of Grasslands*, 13% for the theme *Biodiversity Conservation and Genetic Improvement of Range and Forage Species* (mainly concerned with genetic improvement), 12% for the theme *Grassland Resources*, and 10% for the theme on *Environmental Issues Related to Grassland*, most of which were concerned with climate change. Many of the papers were relevant to more than one theme.

The preponderance of papers relating to management and production reflected the importance in this region for increasing output as a result of population pressures. Some 53% of the contributions came from the host country.

Workshop sessions made an important contribution to the Congress, with workshops on *Hot and Cold Arid Grassland Resources, Production, and Utilization; Improving Herder Incomes and the Grasslands of North (and Central) Asia; and Temperate* and *Tropical Grasslands – Social and Environmental Issues.*

Trends in Content of IGCs from 1997 to 2015

This is only a short period for identifying trends, particularly because the concerns of each host country have a very strong effect on the content of individual Congresses. Nevertheless, some changes are evident.

Compared with Congresses earlier in the 20th Century, there was during this period (1997 to 2015) a distinct move to consider grassland in a broad and multifunctional setting, rather than solely as a means for producing milk, meat and fiber. Also, greater consideration has been given to technology transfer and social aspects of the use of grassland. A feature has been the increased impact of molecular techniques, particularly for plant breeding, and the use of new sensors for increasing precision in grassland management.

The attention to plant genetic resources, particularly forage legumes, was sustained. Increased attention to the exploitation of native species was particularly evident at the Congresses in China in 2009 and Australia in 2013. In China and India, there were many submitted papers dealing with agronomic aspects of the performance and nutritive value of grassland resources and the potential of different species for particular areas. This reflected the large number of contributions from the host country, the agroclimatic variability in the country, and the need to achieve a sustainable increase in production from grassland.

There was particularly strong focus on grazing from 1997 to 2005, with marked progress in the understanding of grazing behavior and effects of sward structure on behavior, animal intake and performance.

Environmental issues attracted increasing attention, but particular issues changed with time. The session on climate change at the Congress in Brazil in 2001 had only one offered paper, but climate change became a major feature of the Congress in Ireland, in 2005, and all subsequent Congresses. Attention was given both to the positive effect of grassland on climate change through carbon sequestration and the negative effects from emissions of methane and nitrous oxide. Whilst papers on climate change increased, the proportion of papers relating to nutrient transformations and water quality tended to fall. Degradation of grasslands was a major issue at the Congresses in China and India, with many papers concerning approaches to restore grasslands, including grazing control, species introduction, and use of silvo-pastoral systems. There was sustained interest in water use efficiency and stress physiology of grassland species.

All of the Congresses in this period had sessions relating to technology transfer. Developments in remote sensing have opened new possibilities for assessing grassland condition and, in conjunction with models and decision support systems, for increasing precision in grassland management. Functions of grassland in addition to the production of livestock products that attracted attention included the provision of environmental services through biodiversity, carbon sequestration, erosion prevention, water quality, and flood mitigation. Papers also dealt with social, cultural, and touristic contributions from grassland and use of grassland as a source of bioenergy, fiber, and chemicals.

Recent Trends in a Longer-Term Context

Humphreys (1997) studied changes in the balance of papers presented at the IGCs from 1937 to 1993. He concluded that "there was considerable homeostasis of disciplinary content during the 56 years. The science of grassland improvement has relied first on an interest in its plant genetic base, and plant genetics, plant physiology, plant ecology and soil science together with animal nutrition and systems of animal production arising from study of the animal-plant-soil-interface. These were the key preoccupations of grassland scientists, whilst environmental science, systems theory, and socioeconomic perspectives emerged with more force in recent Congresses."

The histogram, shown below, takes information calculated from Humphreys (1997) and the present analysis, putting the papers presented at selected Congresses into eight categories. The percentage of papers dealing with plant and soil aspects of grassland varied from 67 to 84% for the Congresses until 1997, but then fell to between 32 and 54%. Over the complete period 1937 to 2015, between 12 and 43% of the papers dealt with utilization, nutritive value, and animal production. The lowest percentage was for the UK in 1937 (12%) and the highest was in Brazil in 2001 (43%). However, since then, the percentage of papers dealing with these aspects has fallen with succeeding Congresses. For the Congresses studied by Humphreys, there was not a separate category for papers dealing with environmental aspects. From 1997, there has been considerable variation between Congresses, with particularly high values for Ireland in 2005 (17%) and Australia in 2013 (12%). The percentage of papers dealing with socioeconomic aspects, policy, and technology transfer was in total less than 4% in the Congresses held between 1937 and 1966, increasing from 7 to 9% for those held between 1993 and 2001, and higher again from 10 to 20% in the Congresses held from 2005 to 2015. Thus, the aspects that Humphreys noted in 1997 as emerging with more force have continued to grow in their contribution to IGC.



Trends in content of selected Congresses between 1937 and 2015.

Research Areas Requiring Further Work as Identified at the Inaugural Meeting

A Resolution passed at the Inaugural Meeting in Leipzig in 1927 listed topics that required further research as follows:

- 1. Liming of Pastures and Meadows
- 2. Over-seeding Perennial Mixtures
- 3. Influence of Origin and Breeding of Legume and Grass Seedlings on Yield of Perennial Pastures
- 4. Grass, Clover Mixtures for the Different Demands of Forage Crop Production
- 5. Experimental Design in Grazing Settings
- 6. Transition of Grass Clover Mixtures into Perennial Pastures
- 7. Influence of Groundwater Level on Yield and Quality of Perennial Pastures and Meadows
- 8. Manure (slurry) Application
- 9. Haymaking and Forage Preservation
- 10. State and Professional Activities for Fostering Pasture and Meadow Agriculture

We decided to see to what extent these issues were represented in contributions to more recent Congresses (Table 3, page 129). Whilst some of the topics are fairly narrow, others cover wide areas. Suffice it to say that plant resources and breeding (the essence of Topic 3) has been a major part of the program of all IGCs, as previously discussed. Also, the use of legumes, particularly clovers (Topic 4), has remained a major theme in grassland research from the time of the first Congress. The allocation of papers to topics (Table 3, page 129) was made solely on the basis of paper titles. The present analysis was restricted to the remaining eight topics (although two of the topics have been sub-divided). While very few papers have dealt specifically with experimental design in grazing experiments, many more have described improved methods for assessing the behavior of grazing animals and their feed intake, key factors in interpreting the results of many grazing experiments. Hence, Topic 5 is divided into these rather different aspects.

The Resolution specifically mentioned haymaking; but since the Inaugural Meeting, many more papers have been presented on other methods of forage preservation, particularly silage. Hence, Topic 9 has been sub-divided into (a) *Haymaking* and (b) *Other Preservation Methods.* Also in this analysis, Topic 6 was considered somewhat more broadly as *Clover Mix Persistence*, rather than *Transition of Grass Clover Mixtures into Perennial Pastures.*

It is not clear from the Resolution whether the request for further research on Manure Application (No. 8) applied only to organic manures (and slurry), or also to mineral fertilizers. In Table 3 we have limited it to organic manures. There have been many papers on responses to inorganic fertilizers at all Congresses. Also, under the topic State and Professional Activities for Fostering Pasture and Meadow Agriculture. Papers were only included if they referred specifically to policies or subsidies.

With the exception of Topic 7 (Groundwater level), there have been papers relevant to all the other topics in most of the Congresses. Topic 7, presented in 1974, was very specific and reflected the large area of drained wetland in parts of Germany and neighboring countries. The only paper in the reviewed Congresses that referred specifically to this issue was indeed one from Germany, but many papers presented at Congresses dealt with other aspects of the effects of water management on grassland production and utilization. This applied particularly to the Congress in Germany in 1977.

Whilst it is well appreciated that grasses and other forage plants are sensitive to soil pH and that the application of lime (Topic 1) provides a solution to low pH problems, it is interesting that there was at least one paper on liming at all subsequent Congresses but one.

Over-seeding with Grasses or Legumes (Topic 2) has been a potentially attractive option for grassland improvement for many years, but the success of over-seeding is influenced by many factors, and reliability has been a problem. It is not surprising that there has continued to be a number of papers addressing this topic with the results indicating ways of increasing the reliability of over-seeding. Likewise, clover persistence (Topic 6) can be affected by a large number of biotic and edaphic factors, and this has been a continued topic for research reported at IGCs. It is still a problem, but much progress has been made. Manures and slurries (Topic 8) are key sources of nutrients, but also a potential source of pollution to the water and air. With increase in research on environmental effects of grassland systems, it is not surprising that research on these topics has continued with some challenges remaining.

Grazing (Topic 5) and *Forage Conservation* (Topic 9) remain the principal routes for utilization of grassland. There has continued to be a considerable number of papers on these topics. There has been a substantial challenge to understand the nutrition of grazing animals and many papers describe progress in techniques for measuring grazing behavior and herbage intake. Real progress has been made and the Congresses have had many contributions (not included in this tabulation) that detailed results from using these improved techniques. While haymaking was the predominant form of forage conservation worldwide at the time of the Inaugural Meeting, the situation has much changed. Technical progress led to the evolution of

efficient silage making methods suitable for both large and small farms with access to mechanization, whilst haymaking remained a method with a high level of weather dependence, particularly in high rainfall areas. That said, haymaking remains a significant method of forage conservation, and there have been papers dealing with hay at all Congresses, mostly concerned with approaches to increase drying rate in the field. Research on silage has continued to feature at IGCs, with accent particularly on the development and use of biological additives for a range of situations and forage materials.

Few papers describing state activities to foster grassland were presented to IGC until the 1970s. This situation may reflect the broadening scope of IGC from the 70s, with increasing attention to socioeconomic issues that complement contributions on technical approaches for increasing production from grassland.

The direct effect of the Resolution on subsequent research at the first Congress is unknown, but some of the issues listed have continued to be foci of research activity and contributions to IGC. This applies particularly to plant resources, the use of clover, and utilization by grazing and conservation. Solutions have been produced for the liming and over-seeding of grassland, whilst technical progress with silage making has reduced the importance attached to research on haymaking. Doubtless, the content of papers at the Congresses will continue to evolve as new issues arise and new technical possibilities emerge. **Table 3.** Papers presented at selected subsequent Congresses on topics identified at the Inaugural Meeting in 1927 as needing further research

	UK	USSR	Germany	Japan	France	Canada	Ireland	China ¹	Australia	India
Research topic	1960	1974	1977	1985	1989	1997	2005	2008	2013	2015
Liming ² (1)	1	2	-	4	3	3	2	2	1	1
Overseeding (2)	1	3	3	4	8	5	-	6	4	-
Grazing: Experimental design (5a)	2	-	1	1	1	-	1	1	-	-
Grazing: Methods of assessing behavior and intake (5b)	4	-	-	2	5	5	8	6	5	-
Clover mix persistence (6)	5	-	2	5	6	5	5	2	1	1
Groundwater level (7)	-	1	-	-	-	-	-	-	-	-
Manure application (8)	-	-	4	-	4	6	7	12	4	1
Hay (9a)	3	1	2	3	8	8	1	5	1	3
Other forage preservation methods (9b)	12	12	35	23	18	23	10	43	34	11
State and professional activities to foster pasture and meadow agriculture (10)	-	-	-	1	-	13	3	49	15	9
Total number of papers at Congress	187	380	345	559	480	1022	863	1,720	689	490

¹This was a combined meeting between the International Grassland Congress and the International Rangeland Congress; thus, topics presented potentially reflect interests unique to this Congress.

²Numbers in parentheses indicated the Topics identified at the Inaugural Meeting in 1927 as needing further research. (page 125).

"Grassland agriculture has been and will always be of major importance to the well-being of the people of the world. We must continue to work closely with one another - scientist to scientist, institution to institution, and country to country to meet the challenges before us."

Gerald B. Carlson, USDA-SEA-AR, XIV Congress, USA (Carlson, 1983)

Chapter 4 The Evolution of the Constitution of the International Grassland Congress

Growing Pains

Over the evolutionary years of the International Grassland Congress, organizational structure began to be recognized as a growing need. In the beginning, for each Congress, the organizational structure was heavily dependent on the leadership entrusted to develop each meeting and to those associated with other existing organizations that provided personnel and other requirements of organization. It was undoubtedly the remarkable enthusiasm and dedication of the leaders and members of the first two Congresses especially, that the International Grassland Congress became a reality that has continued to this day. What began as a single letter of invitation sent by Professor Falke to about 50 scientists in 8 countries grew from 16 participants at the first meeting to 58 attendees at the second meeting. They came by day-long travel by train and steamer. In 1927 they referred to it as a "Meeting," but by the end of the second meeting in 1930 it was being called a "Congress." While these arrangements were manageable during these early days, by the III Congress, the need for a more formalized structure was becoming obvious.

At the III Congress in 1934 in Switzerland, the name of the organization became formally the *International Grassland Congress Association*. *The Statues (Statutes) of the International Grassland Congress Association* were published (<u>Appendix E</u>) to provide the guidelines for "Membership, Administration, and Activities, The Executive Body, Members' Assembly, The Central Office, The Auditors, and Dissolution of the Association."

After serving as Secretary at the first and second meetings, Dr. Geith became the Permanent Secretary at the III Meeting; the Central Office in Leipzig, Germany was charged with affairs of the International Grassland Congress Association. By this point, there was a "steady increase in numbers of persons taking part in the Congresses," including "ordinary, extraordinary, and honorary members, in addition to promoters and friends of the Grassland Congress."

Organization of the Fourth Congress (1937) involved both the Central Office of the International Grassland Congress Association, Leipzig, Germany and the staff of the Imperial Bureau of Pastures and Forage Crops, which provided assistance with translation and proof-reading. Dr. Geith was re-elected as Organizer of the Central Office. Attendance had grown to more than 350 participants from 37 countries.

At the Fifth Congress in the Netherlands (1949), delayed due to WWII, Resolutions had been passed not to reestablish the Association, and the International Grassland Congress was charged to go forward on a global basis. The USA was mentioned as a possible venue for the Sixth Congress. Dr. O. S. Aamodt (USA) proposed that in the event that the USA was unable to host the Congress, the authority for receiving invitations from or extending suggestions to other countries should remain with the Executive Officers of the Fifth Congress. Dr. Geith died in 1945 during the war, leaving the Congress without a Secretary. Dr. P. V. Cardon (USA) was elected Temporary Chairman and Dr. O. S. Aamodt as Temporary Secretary of the Sixth Congress.

By the Sixth Congress in Pennsylvania, USA, in 1952, it had become apparent that Rules of Procedure were necessary to provide the organizational structure for current and future meetings. P. V. Cardon convened the Business Meeting. The first order of business was an explanation of the Rules of Procedure (<u>Appendix F-1</u>). One point, important to later actions, occurred in Section III – Voting; Article 7, which stated that "All official delegates and members shall have the privilege of voting on such matters as require a decision of the entire Congress, except on a question of organization, in which case each country shall have one vote only. Decisions will be taken by majority vote." Alvaro Barcellos Fagundes (Brazil) moved that the Rules be adopted. Robert S. Campbell (USA) seconded this, and the motion carried. This provided guidelines for conducting the meetings and the business of this Congress.

Modifications were made to the Rules of Procedure at each of the next eight Congresses. In New Zealand (1956), the need for continuity between meetings was recognized, and a committee was appointed to make recommendations for an Executive Committee at the following Congress.

In Reading, UK, (1960), voting was revised such that each Full Member of the Congress was entitled to one vote, except that the total number of votes available to members from the United Kingdom was limited to 40. The leader of the delegation

from the USA (P. V. Cardon) requested that his delegation would also be limited to 40 votes. It was also at this Congress that an Executive Committee [renamed Continuing Committee at the Congress in Finland (1966)] was created to include nine members. Eight members would each represent one of the eight geographic regions recognized by the Congress. The President of the immediately preceding Congress would be the ninth member of the Committee (<u>Appendix Tables 0-2a</u>, <u>0-2b</u>, and <u>0-2c</u>). The Executive Committee was responsible for providing continuity for the IGC between its meetings.

In Brazil (1965), voting at "business meetings, closing and extraordinary sessions" would be limited to Full Members with the condition that the number of votes from any one country would not exceed 40 votes.

In Finland (1966), the Rules of Procedure, as presented at the Opening and Final Business Meetings, became the accepted guidelines until a formal Constitution was adopted in Leipzig in 1977 (<u>Appendices F-2</u>; <u>F-3</u>).

Voting was again revised such that each Full Member was entitled to one vote, but the total number of votes available to the members from any one country was limited to 30. Also, at this Congress, the Executive Committee was renamed as the Continuing Committee of the International Grassland Congress. A Committee was appointed to study the functions of the Continuing Committee during the Finland Congress. At the Final Business Meeting, the name change from Executive Committee to Continuing Committee was approved. Also, the Continuing Committee's functions were expanded to include the responsibility "to select the host country for the forthcoming Congress and to announce the name of that host country at the immediate Congress" (Appendices F-2; F-3). These expanded functions stated further that "the Continuing Committee shall select and obtain the acceptance of the host country for each Congress. In so doing the Committee shall take cognizance of the sites of previous Congresses and of the major geographic regions of the world. The Continuing Committee shall secure from the proposed host country a firm agreement to act as host to the Congress. It shall announce the country at the Congress immediately preceding, e.g., the host country for the XIII Congress shall be announced at the XII Congress."

At the XI Congress in Australia (1970), Dr. R. M. Moore, Chairman of the Continuing Committee, outlined the history and functions of the Committee as presented in Helsinki, Finland, in 1966. In the Rules of Procedure, voting at this Congress was again revised with each Full Member of the Congress entitled to one vote as indicated by a showing of hands. At the Final Business Meeting, a recommendation to the Continuing Committee was that this Committee "allocate venues of subsequent International Grassland Congresses to give representation to both temperate and tropical or subtropical locations, and to both long-established and developing grassland research centres."

The XII Congress, Moscow, USSR - 1974

Although the guidelines for Rules of Procedure had been accepted in Finland (1966), they were again revised at the XII Congress in Moscow, USSR, 1974, such that "Each Full Member of the Congress will be entitled to one vote. The Congress Resolutions will be adopted by the open voting and by the majority of votes of the Congress Full Members present at the final Business Meetings." This was without the restriction of limiting the total number of votes available to the members from any one country to 30.

Responsibilities of the Continuing Committee regarding selection of venue for the next IGC were clearly recorded at the Business Meeting in Finland (1966), and again in Australia (1970). Although the Committee was specifically given this responsibility, a conflict occurred during and following the Moscow meeting in 1974. At the Final Business Meeting of this Congress, the following Resolution was passed that was in direct conflict with the Rules of Procedure:

Resolution on the Venue of the XIII (Jubilee) International Grassland Congress:

On the occasion of the 50-year anniversary of calling the I International Grassland Forum the Congress resolves to hold the next XIII International Grassland Congress in Leipzig (German Democratic Republic) in 1977.

Resolving the Constitutional Issues

Dr. Roger J. Wilkins was an active participant in this meeting and gives a first-hand account on the why and how this unfolded at the Moscow Congress:

Background to My Involvement

I was privileged to be invited to present a plenary paper at the XII International Grassland Congress in Moscow in June, 1974. This was still early in my career at the Grassland Research Institute, Hurley, England, but the honor fell to me, because the original invitation was to my previous boss, Frank Raymond. He, though, had moved away from research and suggested that I be invited to prepare and present the paper.

This suggestion was accepted, and at the Congress I was a guest of the Soviet Union, had an interpreter assigned to me, and was given VIP treatment. My presentation on *Scientific and Technical Progress in Forage Crop Dehydration* was on the first morning of the Congress to some 1,000 delegates.

Towards the end of the Congress, I was asked whether I would be prepared to be nominated to become a member of the Continuing Committee of the Congress. The Nominating Committee reckoned they needed a (relatively) young scientist, and I was 34 at the time. I was to represent Europe other than the Mediterranean region, so that my constituency included both Eastern and Western countries. At the Final Business Meeting, I and other members of the Continuing Committee, were "up front" in the Presidium, together with the President of the meeting and others. I mention this because it gave me a good position to contribute to the Meeting, as detailed below.

Key Events

- 1. According to the Rules of Procedure adopted at the X Congress in Finland in 1966, decisions on the venue for the following Congress were to be made by the Continuing Committee and announced at the Final Business Meeting of the preceding Congress. Prior to the meeting in Moscow, proposals to host the XIII Congress had been made by Ireland, the Federal Republic of Germany, and the German Democratic Republic. The Continuing Committee accepted the proposal from Ireland.
- 2. Although the Continuing Committee's decision was according to the Rules of Procedure, at the Final Business Meeting, new procedures were agreed that included each full member of the Congress having the right to vote. The President, P.I. Morozov, also put to the meeting that the XIII Congress should be termed "Jubilee Congress," as it will be held on the 50th Anniversary of the first Congress held in Leipzig. This was accepted without objections.

Morozov then indicated that although the Continuing Committee had resolved to hold the XIII Congress in Ireland, he, as President, had received many letters and telegrams from individual scientists and official bodies in Bulgaria, Hungary, the German Democratic Republic, Cuba, Mongolia, Romania, Czechoslovakia, and the Soviet Union, all proposing that the next Congress should be held in Leipzig. He said that this should be considered.

3. D. E. McCloud (USA), Chairman of the Continuing Committee, then outlined the evolution of the Procedure whereby the Continuing Committee makes the decision on venues and he announced the decision for the meeting to be held in Ireland. It is unfortunate that there is no reference to this announcement of the decision of the Continuing Committee or to the subsequent discussion and voting in the record of the Business Meeting published in the Proceedings. There is simply reference to the Resolution to hold the meeting in Leipzig (see below). My description below is based on a detailed record of the Business Meeting that was circulated by the Soviet organizers after the meeting to

members of the Continuing Committee in both Russian and English and my memory of the Meeting (which is in close accord with this detailed record).

- 4. Following the conflicting announcements on venue, there were impassioned speeches from delegates on the issues of protocols and venues, with attitudes split along an east-west divide. I, from my upfront position, proposed that, in view of the information presented to the Business Meeting, the question of venue be referred back to the new Continuing Committee for further consideration and for them to make a final decision. This seemed to me to be an approach that might both be acceptable to President Morozov and confirm the primacy of the Continuing Committee in deciding venue. F.A. Perez Infante, from Cuba, a retiring member of the Continuing Committee, expressed the view that the issue was too important to be resolved by a small group of people, but should be resolved by this Business Meeting. My proposal was rejected by 580 votes to 181, and then a large majority supported the proposal that the decision be made by the Business Meeting. The Meeting then proceeded to vote between Ireland (115 votes) and Leipzig (486 votes). There were 1064 full delegates at the Congress, of whom 611 were from the USSR and 143 from other countries in Eastern Europe. Not all delegates would have attended the Final Business Meeting.
- 5. A meeting of the Continuing Committee was held on the evening following the Business Meeting. It was attended by outgoing, continuing and newly elected members, but no person from GDR or the Soviet Union. S. C. Pandeya (India) was elected Chairman. It was agreed that the venue was not yet fixed. Actions were required to reaffirm the role of the Continuing Committee in determining the venue of Congresses and a formal constitution needed to be produced and adopted. Pandeya undertook to produce a draft and to circulate to members of the Committee within two months. It was intended that a final decision on the venue for the XIII Congress would be taken by the middle of 1976. He would inform Ireland and GDR of this timetable. Not surprisingly, in subsequent correspondence with the Continuing Committee, Morosov maintained that the matter had been decided at the Business Meeting. Meanwhile the Irish Grassland and Animal Production Association indicated they were continuing to prepare for a Congress to be held in 1977.
- 6. In any event, it took rather longer for a draft Constitution to be produced, and it was not until February, 1975, that it was circulated to members of the Continuing Committee. Further modification took place to produce a draft that appeared to have general support. This was in the age before emails and Internet and communications could be very slow, particularly from some members of the Committee. The key feature in relation to fixing Congress

venues was that the decision was to be made by the Continuing Committee provided that one application received two thirds of the votes. In the event of no application reaching this threshold, applications would be voted upon at the Business Meeting of the Congress with each country having one vote.

The draft also detailed the procedure whereby the constitution could be amended. Essentially, the Committee hoped that provided assurance was given that this new set of rules would not to be challenged by the GDR, this was a formula that would enable wide international support to be given to the Congress in Leipzig, whilst producing a clear set of rules for decisions on future congresses.

A major step forward was made when the Leipzig organizing group invited Pandeya and myself to visit GDR in June, 1976, for discussion on the Congress and the constitution. I was invited to accompany Pandeya, because GDR was



S. C. Pandeya and R. Wilkins negotiating in 1976. (Provided by Roger Wilkins.)

within my Continuing Committee constituency and also, I had been heavily involved in helping to develop the Constitution. This was a successful meeting and our hosts supported the draft constitution. Congress President Lemke indicated that they would do all that they could to help get the Constitution adopted at

the Business Meeting in Leipzig. This support was particularly important, as M.A. Smurygin (the representative of the previous Congress on the Continuing Committee) had very belatedly proposed major changes to the draft Constitution. A formal agreement was signed. On our part, Pandeya and I were sufficiently reassured to recommend to the Continuing Committee that the Congress be held in Leipzig as a legitimate International Grassland Congress and to ask members to encourage support from their regions for the Congress. The organizers agreed to delay the date for submission of offered papers from 1 Aug to 1 Oct. 1976, to help authors respond to this new agreement.

7. The XIII International Grassland Congress was successfully held in Leipzig in May, 1977. The Constitution put forward by the Continuing Committee was agreed at the Business Meeting without comment (<u>Appendix F-4</u>). Only minor changes have been made since that time.



Presidium and delegates at Business Meeting in Leipzig in 1977.

- 8. Perversely, the Continuing Committee had not received any formal invitations to host the XIV Congress. It had been well known that a bid was being prepared by India, but a change in government in India had resulted in reduced support so this bid was not made. The Continuing Committee agreed in Leipzig that the following countries be approached in order as possible hosts for the next Congress: USA, Canada, Cuba and India. This was announced at the Business Meeting and a bid was subsequently received from the USA and was accepted by the Continuing Committee. The XIV Congress was duly held in Lexington, Kentucky, in 1981.
- 9. Following the Congress in Moscow, preparations continued to be made to hold an International Grassland meeting in Dublin in June in 1977. This meeting, which was entitled *International Meeting on Animal Production from Temperate Grassland*, was a successful event. Much later, the IGC was held in Dublin in 2005.

R.J. Wilkins

Following acceptance of the Constitution in 1977, no further action was taken until the 1993 XVII Congress held in New Zealand and Australia. D. G. Crespo (FAO, Rome, Italy; Chair of the Continuing Committee) reported at the first Business Meeting, "No formal amendments to the Constitution had been proposed for voting. However, a consultation carried out among the members of the Continuing Committee showed that there are some points in the Constitution, which need to be reviewed. In this context the Resolutions Committee would be asked to search out appropriate names to form a committee to fully review the present Constitution between this Congress and the next" (XVIII Congress in Canada).

At the final Business Meeting in Rockhampton, Australia, Professor L. R. Humphreys (Australia) presented a Resolution (seconded by N. M. Tainton, South Africa) that recommended that "the next Chairman of the Continuing Committee formulate Amendments to the Constitution to be presented to the XVIII International Grassland Congress with the effect that: (i) the venue of the next Congress will be determined by a simple majority of votes of the Continuing Committee, using a preferential voting system (single transferable vote) if necessary; and, (ii) the names of the heads of the delegation of each country, which are needed for dealing with Amendments to the Constitution, shall be submitted by the time of the Final (and not the First) Business Meeting."

This was followed by comments:

- "Currently the choice of venue of the next Congress requires (i) a 2/3 majority of the Continuing Committee; there is no reference to an iterative or transferable voting procedure, or (ii) failing agreement in the Continuing Committee, a decision of the heads of delegation at a Congress Business Meeting."
- 2. "The present Constitution provides that the names of the head of the delegation of each country shall be submitted before the start of the First Business Meeting; this would create logistic problems if required since it would be difficult for the members from each country to meet to elect a head of delegation before the First Business Meeting. These two pointers do not exclude the practicability of other Amendments being proposed in 1997."

At the Opening Business Meeting of the XVIII Congress in Canada (1997), Dr. Tom Nolan (Ireland), Chair of the Continuing Committee, announced "in accordance with Rule (6) (D) (iv), action was taken to modify the Constitution to accommodate **Resolution 1** passed at the XVII Congress in Australia in 1993." Numerous changes had been suggested. Further opportunity to suggest changes was given to delegates during the meetings in Canada but before 1200 h on 17 June, 1997. Nolan thanked Professor Roger Wilkins (involved in writing the Constitution in 1977) and Professor Humphreys (Chair of the Resolutions Committee for the XVII Congress) for their assistance with this revision process.

At the Final Business Meeting, Real Michaud (Canada), Chairman of the Resolutions Committee presented the following:

Resolution 1 CONSTITUTION

It is recommended that a committee be established by the Continuing Committee of the International Grassland Congress to review the Constitution based on the numerous suggestions made to date and present the draft new constitution to the XIX Congress in Brazil for adoption. This was seconded by E. Piano, Italy and the Resolution carried.

Four years later at the XIX Congress in Brazil, R. Clements, then chair of the Continuing Committee, presented the following overview at the Business Meeting:

At the XVIII International Grassland Congress in Canada in 1997, delegates instructed the Continuing Committee to review the IGC Constitution, to incorporate a number of suggestions for change, and to present the Constitution to the XIX Congress. Acting on these instructions, a small team led by Professor Roger Wilkins undertook the task of re-writing the existing Constitution. Early drafts of the re-written Constitution were widely circulated, and the completed document was published on the IGC web site in February, 2000. No suggestions for change have been received since that time, so clearly the Constitution has the approval of IGC members. The re-written Constitution does not contain any changes that were not proposed and adopted in Canada or earlier, so there is no need for a formal vote of endorsement, and I commend the writing team for a sterling effort.

The revised Constitution of the International Grassland Congress as approved at the XIX International Grassland Congress in São Paulo, Brazil, is found in <u>Appendix F-5</u>.

During the Final Business Meeting in Brazil (2001), the following Resolution was presented and was supported by acclamation:

The members of the XIX International Grassland Congress would like to recognize the very good contribution of the working groups, chaired by Professor Roger Wilkins that edited the existing Constitution to comply with the various suggestions that were agreed upon in Canada in 1997 and at previous Congresses.

"There is a need for a mechanism to enable grassland scientists to speak as one body on problems of world-wide significance, and to promote the importance of grassland science in ecosystem conservation and utilization."

From Resolution Number 1, Presented by Dr. R. Clements (Australia) at the XVI IGC, Nice, France (<u>Appendix</u>)

Chapter 5 Recognizing the Need for Cooperation and Communication

The International Grassland Congress has played many important roles, but from its inception in 1927 an all-encompassing objective has been to promote and enhance cooperation and communication among those involved in the science, industry, and the practice of improving and promoting the Worlds grasslands. At the very first meeting in Leipzig in 1927, Professor Falke expressed the hope that their meeting would benefit their countries and "the nations of the earth."

Over time, within the IGC, two diverging philosophies evolved. One was to broaden the reach and effectiveness through possible formation of an International Grassland Organization while the other approach was to form additional Grassland Organizations/Congresses that would focus on specific types of grazing lands and their more unique needs.

Formation of an International Grassland Association/Organization

It was at the III Congress in 1934 that the name International Grassland Congress Association was first adopted. The *Association* served mainly to provide organizational structure for the Congresses. *International* was included reflecting the decision made to invite participants from a wide range of countries and its objective to promote interchange of scientific and practical experience. At the first Congress following the Second World War (1949), the decision was made to drop *Association* from the name, and the Association was disbanded. In Finland (1966), a change of the name was again suggested but no change was made.

At the XII Congress (USSR), the advisability of founding an International Grassland Organization was discussed. Three years later at the XIII Congress in Leipzig, Germany, members expressed concern regarding this Resolution — there were "many considerations and aspects which did not favor setting up such an Organization at that time, but that grassland organizations should be established at national levels."

This was considered at the following Congress in Lexington, Kentucky, but again it was decided that such an Organization was not useful at that time. The Continuing Committee did recommend that national level organizations should be established.

At the Final Business Meeting, Dr. R. W. Brougham (New Zealand) presented a Resolution for consideration as follows:

That the Continuing Committee of the International Grassland Congress consider the desirability of reconstituting the International Grassland Congress to consist of a Central Governing Body of similar Constitution to the Continuing Committee but having responsibility for the formation and coordination of a number of Chapters representing and taking responsibility for smaller international meetings embracing the different climatic and topographic regions of the world.

The Resolution passed by a show of hands, after considerable discussion. Though it suggested possible approaches to increasing the impact of grassland organizations, this Resolution apparently went no further.

At the following Congress in Japan, Dr. Yoshisuke Maki spoke to the enormous potential for grassland development in the world and the increasing importance of international cooperation. He also pointed out that there are "long-pending problems to be solved as early as possible" and that this could be best advanced by "First, recommending the establishment of a national level Grassland Organization; secondly, founding an International Grassland Organization; and thirdly, by establishment of a coordinating body for the Grassland Congress and the Rangeland Congress."

In France (XVI 1989), a Resolution was passed that concluded as follows: "Therefore, it is resolved that the Continuing Committee establish a working group to study and explore the feasibility of establishing an international organization to provide improved communication, cooperation and coordination of activities in science and technology associated with forage, grassland, and rangeland resources" (<u>Appendix J</u>).

The possibility of forming a common International Organization to coordinate efforts between the International Grassland Congress and the newly formed International Rangeland Congress (IRC) was also discussed when Dr. Crespo, Chair of the Continuing Committee, attended the IV IRC in Montpellier, France, in 1991.

While today, there is an even more urgent "need for a mechanism to enable grassland scientists to speak as one body on problems of world-wide significance, and to promote the importance of grassland science in ecosystem conservation and utilization," to date, there has been no structure implemented by the International Grassland Congress to address this need. (From Resolution 1, XVI IGC, Nice, France, <u>Appendix J</u>).

The Association, formed when the Grassland Congress was just beginning, served the purpose of supporting this new organization. It only governed the IGC, not a group of organizations. By 1949, the Association was considered no longer needed. Is there now a sufficiently compelling purpose to be served to warrant formation of an overarching organization?

Organizations/Congresses that Focus on a Specific Type of Grazing Land

By the mid-1970s, with growing concerns that the IGC was not encompassing the breadth and depth of rangeland issues, the International Rangeland Congress was formed. While concern was expressed over the failure of the IGC to sufficiently address rangeland issues, the formation of the IRC was indeed the forming of a new Congress that would focus specifically on the issues and uniqueness of the arid and semi-arid rangelands of the world.

The International Rangeland Congress

The first meeting of the International Rangeland Congress was announced at the 50th Anniversary meeting in Leipzig (1977) and was held in Denver, Colorado, USA, in 1978. Attendees represented 39 countries. Stated objectives included stimulating an international debate regarding the challenges of providing animal products to meet demands of a rapidly increasing population and increasing the productivity of rangelands. Because most of the world's rangelands are in semiarid zones, their vulnerability to desertification was concerning and had recently been the subject of a United Nations debate. Pastoralism, including both basic and applied interests in physical, biological, and the social sciences was addressed as well as failure to integrate productive rangeland systems into national economies (Spooner, 1979).

XIV International Grassland Congress – Lexington, Kentucky, USA - 1981

In his Presidential Address in the Opening Ceremony of the XIV IGC in Lexington, Kentucky, USA, Dr. Robert F Barnes noted that the arid and semiarid areas of the world's land masses were "receiving increasing pressure to produce forage for livestock and wildlife, water for downstream needs, and services for man's enjoyment." President Barnes stated that "research efforts into problems of arid and semiarid lands are rapidly increasing, and a worldwide need exists to communicate the results of this research and a practical management" (Appendix C-14).

President Barnes reported that for the XIV Congress in Kentucky, there had been a conscientious effort to develop a program that encompassed the full scope of arid, semiarid, subhumid, and humid areas of the world that also included temperate, subtropical, and tropical regions as well. He noted that the formation of the International Rangeland Congress was "due, at least in part, to the failure of the International Grassland Congress to encompass the full complexity and diversity of grassland agricultural systems, particularly arid and semiarid rangelands."

At this point, the International Rangeland Congress was actively pursuing a venue for the second IRC meeting, and at the final Business Meeting Dr. Geoff Robards (Australia) announced that the second meeting would be held in Adelaide, South Australia, in May, 1984.

In his Presidential Address, Dr. Barnes expressed personal support for the concept of two Congresses, if programs of both Congresses were complimentary and that the Congresses were held in alternating years. Dr. Barnes strongly recommended that a close liaison be maintained between the two Continuing Committees and stated that the two Committees should specifically provide for a formal liaison on a continuing basis. Dr. Barnes envisioned the establishment of a coordinating body for the Grassland Congress and the Rangeland Congress, and he suggested the name might be *International Grazing Lands Organization* or *International Forage Pasture and Range Organization*. He stated, "it is only as we work together for good that we can truly serve mankind."

XV International Grassland Congress-Kyoto, Japan - 1985

During the Opening Ceremonies of the XV IGC in Japan, Congress President Nikki stated, "In relation to the grassland problems of arid and semi-arid areas and of desertification, official liaison between the International Rangeland Congress and the

International Grassland Congress is essential, as was stated by Dr. Barnes in his Presidential Address at XIV International Grassland Congress in Kentucky. I would like to recommend that the Continuing Committee of the International Grassland Congress consider the most appropriate manner of pursuing such a liaison" (Nikki, 1985).

At the Opening Business Meeting, Professor Ross Humphreys, Chair of the Continuing Committee, reported liaison with the International Rangeland Congress:

"We share common disciplinary interests with the rangeland scientists and it is important that active cooperation between the two organizations continue. We are grateful to the II International Rangeland Congress Organizing Committee for assisting us in the publicizing of this Congress at their 1984 Adelaide meeting.

"Discussions have been conducted with the International Rangeland Committee to achieve some global balance in Congress venues and some synchrony in their timetabling. We wish them well in the arrangements for the III International Rangeland Congress to be held in India in December, 1987. The Committee has active liaison with their Chairman, Dr. J. R. Bentley" (Humphreys, 1985)

XVI International Grassland Congress – Nice, France - 1989

The need for cooperation and communication among grassland scientists and organizations on a global basis and of becoming more inclusive of all the worlds grazing lands was again addressed at the XVI Congress in France (1989). This was solidified in Resolution 1, presented in the Final Business Meeting by Dr. R. Clements (Australia), Chairman of the Resolution Committee (Appendix J for entire Resolution). This resolution addressed several emerging issues to which the Congress was awakening including the following:

Whereas, with the initiation of the first International Rangeland Congress in 1978, which emphasized the extensive arid and semi-arid rangelands of the world, there became a need for establishing communication and coordination between the Continuing Committees of the two Congresses; and Whereas, there is a need for a mechanism to enable grassland scientists to speak as one body on problems of world-wide significance, and to promote the importance of grassland science in ecosystem conservation and utilization; Therefore, it is resolved that the Continuing Committee establish a working group to study and explore the feasibility of establishing an international organization to provide improved communication, cooperation and coordination of activities in science and technology associated with forage, grassland, and rangeland resources.

The Resolution was unanimously approved.

XVII International Grassland Congress – New Zealand and Australia - 1993

At the Opening Business Meeting in New Zealand, Dr. David Crespo, Chair of the Continuing Committee, reported that he had attended the IV International Rangeland Congress (IRC) held in Montpellier, France, in 1991. He addressed the IRC Congress, requesting rangeland and grassland workers "to unite efforts in defending their common interests and patronage from the attacks of policy makers who through subsidies to feed grains and other wrong policies are discouraging grassland-rangeland and forage improvement and contribute to the degradation of considerable areas of collective rangelands." Dr. Crespo participated in a meeting at that Congress where the need for co-operation of the IGC and the IRC was stressed. The possibility of forming a common International Organization to coordinate efforts was also discussed. The IRC was invited to attend the XVII IGC, and it was suggested that a joint meeting could be organized in New Zealand to further these discussions.

By 1993, the number of national Grassland and Rangeland Societies were increasing globally. At the Final Business Meeting of the XVII IGC in Rockhampton, Australia, a Resolution recommended: (i) that the International Grassland Congress Continuing Committee establish and maintain continuing communication among scientific and professional societies, organizations, and foundations throughout the world with similar missions and goals: and, (ii) that the chairman of the Continuing Committee establish communication with the Continuing Committee of the International Rangeland Congress and explore opportunities for cooperation and co-ordination among the activities and programmes of the two Congresses. The motion was seconded by J. D. Ivey, South Africa. The motion carried.

XVIII International Grassland Congress -Canada - 1997

Tom Nolan, Chair of the IGC Continuing Committee, met with Dennis Child, outgoing Chair of the IRC Congress, during the V IRC meeting in Salt Lake City, Utah, in July, 1995. Nolan reported that generally the discussions lead to a conclusion that a sound basis for continued contact and discussion existed and that ultimately a coordinated effort would be best in promoting the objectives of both Congresses. The objectives are to "promote interchange of scientific information on all aspects of natural and cultivated grasslands" as stated in the IGC Constitution. He further stated, "Adherence to historic structures is considered unlikely to fulfill this objective." Given the increasing urgency of addressing global issues of mutual interest, the increasing difficulty of finding funding for Congresses, and the overlap in interests, the need for combined efforts is compelling. A first approach might be a joint World Grassland Congress or World Grassland and Rangeland Congress held every three years. Loss of identity by either Congress could be avoided. Nolan recommended that these discussions "should now enter a more formal level so that the main objective of improved promotion of grassland and rangeland science in all parts of the world can begin sooner rather than later. The IRC would welcome further discussion." Nolan suggested that perhaps the VII IRC and the XX IGC might entertain the possibility of a joint meeting and that a small select committee to continue interaction with the IRC could be appointed.

At the closing session of the IGC meeting in Canada, the following Resolution was put forth:

It is recommended that the Continuing Committee of the International Grassland Congress select a small committee to make a representation to the Continuing Committee of the International Rangeland Congress on the possibility of a joint meeting of the Congresses three years after the Brazil Congress and to put together a resolution for an eventual amalgamation of the two Congresses.

(Seconded by L. R. Humphreys, Australia)

An amendment was proposed by R. J. Wilkins, UK, seconded R. R. Hart (USA) as follows:

It is recommended that Continuing Committee of the International Grassland Congress select a small committee to make a representation to the Continuing Committee of the International Rangeland Congress on the possibility of a joint meeting of the Congresses three years after the Brazil Congress and to consider the possibility of an eventual amalgamation of the two Congresses.

Amended resolution CARRIED

Following meetings in Canada, and as recommended by **Resolution 2**, Bob Clements (Chair, IGC Continuing Committee) and Margaret Friedel (Chair, IRC Continuing Committee) met to discuss the feasibility of holding a joint meeting between the two Congresses. Working together, they developed a discussion paper that was circulated to all members of the Continuing Committees of both Congresses as well as to

numerous senior members of the international grassland research community and to many rangeland and grassland organizations (<u>Appendix K</u>).

Copies of this document were sent to all Continuing Committee members of both the IGC and the IRC. Within the IGC's Region I, copies were also sent to a number of rangeland- and grassland-oriented scientific societies and organizations to ask their view on the opportunities as set forth in this document. Unanimous support for a shared Congress venue was gathered from these organizations.

A Shared Congress - To Be or Not to Be?

During the Business Meeting of the XIX Congress in Brazil, Dr. Clements reported feedback that resulted from discussions during his attendance at the VI IRC (1999) and with members of the IGC Continuing Committee. The following is taken from the minutes of the Business Meeting:

"Feedback from members of both Continuing Committees showed a considerable diversity of opinions, with no groundswell of support for a shared Congress at that time. On your behalf, I (Bob Clements) attended the VI International Rangeland Congress in July, 1999 (Townsville, Queensland, Australia) and spoke to the delegates about the possibilities for greater collaboration between the two Congresses. In close consultation with Dr. Vivien Allen (Continuing Committee representative of Region I) and representatives of a number of rangeland societies in North America, three resolutions were drafted for consideration by the delegates at the VI International Rangeland Congress.

"These were:

- 1. "To promote a more efficient and effective interchange of information on all aspects of range and grassland science, and to meet common goals and objectives, the IRC endorses the concept of closer cooperation with the IGC.
- 2. "The Chair of the IRC Continuing Committee should explore mechanisms for meeting common goals and objectives with the Chair of the IGC Continuing Committee.
- 3. "The IRC endorses the concept of a shared conference with the IGC by the year 2007 and requests the Continuing Committee of the IRC to develop in collaboration with the Continuing Committee of the IGC the framework for a shared conference program and procedures for selection of a host country."

"Duane McCartney (Canada) and Len 't Mannetje (Netherlands) spoke in favor of these resolutions.

"The first two resolutions were supported by a considerable majority, but the third was lost by a vote of 46 votes to 71. [In fact, the IRC was given a mandate by the delegates, at that Congress, not to hold a joint meeting.]"

"Despite this disappointing outcome, a groundswell of support for closer collaboration is now emerging. For the last two years, the grassland and rangeland societies of North America have consistently supported a shared Congress. These include the American Society of Agronomy, the Soil Science Society of America, the Crop Science Society of America, the American Forage and Grassland Council, The American Society of Animal Science, the Society for Range Management, and the Canadian Society of Animal Science. I expect that this momentum for change could be maintained. However, I believe that if the negotiations with the IRC are to be continued, the new IGC Continuing Committee will need a clear indication of support from the delegates at this Congress. I expect that the Resolutions Committee will be giving this matter its close consideration during the next few days, and will be consulting widely with the delegates present" (Clements, 2005a).

Follow-up discussions were held during the Brazilian Congress and resulted in three Resolutions that were presented during the final business meeting. Resolutions 4 and 5 were patterned after the first two Resolutions (above) presented previously to the International Rangeland Congress. As previously noted, these two Resolutions had received support from the IRC. The third Resolution that was not supported by the IRC was revised as Resolution 6:

Resolution 4 (supported unanimously)

To promote a more efficient and effective interchange of information on all aspects of range and grassland science, and to meet common goals and objectives, the International Grassland Congress endorses the concept of closer cooperation with the International Rangeland Congress.

Resolution 5 (supported unanimously)

The Chair of the IGC Continuing Committee should explore mechanisms for meeting common goals and objectives with the Chair of the IRC Continuing Committee.

Resolution 6 (supported unanimously)

The members of the XIX IGC request that the Chair of the IGC Continuing Committee meets with the Chair of the IRC Continuing Committee within the next 12 months to jointly identify and promote shared activities for meeting common goals and objectives.

With the passage of the first two Resolutions by both the IRC and the IGC, there was a clear mandate to enhance communication and cooperation between the two organizations to meet common goals and objectives. With the passage of the third Resolution by the IGC, a mechanism and a mandate were provided to reach out and begin the process of implementing the intent of these two resolutions.

The IGC, IRC, and numerous individuals in China followed many steps to bring this first joint Congress into reality. The Road to China is described in the Opening Business Meeting of the XX IGC in Dublin, Ireland (<u>Appendix C-20; pages 274 to 277</u>) and in the joint Opening Address at the XXI IGC and the VII IRC Congress in China (<u>Appendix C-21; pages 279 to 282</u>).

With the acceptance of the bid from China for a joint IGC/IRC Congress, Professor Yun Jinfeng, President of the Chinese Grassland Society, and Dr. Lei Erdeni, Vice Governor of Inner Mongolia, formally invited delegates present in Dublin, Ireland, at the XX IGC to attend saying in part:

Honorable president, dear ladies and gentlemen:

On behalf of the Chinese Grassland Society, please permit me to extend my sincere gratitude to the Continuing Committee of the IGC for acceptance of the bid to hold the XXI International Grassland Congress in conjunction with International Rangeland Congress in Hohhot, Inner Mongolia of China, in the year 2008.

To host the first joint meeting of IGC and IRC in China is not only of extreme importance to China, but it is also a landmark event to world. It offers a great opportunity for the world's grassland and rangeland scientists and practitioners to become acquainted, and to increase our communication and cooperation.

Welcome to all of the scientists and practitioners from all over the world to attend the first joint meeting of the IGC and the IRC in Hohhot in the year 2008!

At the final business meeting in Dublin, Resolution 6 was passed unanimously as follows:

The members commend the Continuing Committee and the delegates from the IGC and the IRC for the decision to hold a joint IGC/IRC congress in China in

2008 to be followed by a return of each congress to its normal rotation schedule.

China Final Business Meeting:

Resolution 9 (Carried unanimously)

Given the demonstrated benefits of the joint IGC-IRC 2008 meeting in China, members of the XXI IGC request that future IGC Continuing Committees make every endeavour to conduct joint activities with the IRC in order to maximize synergies in knowledge, practice, and resources. More specifically, it is requested that the IGC Continuing Committee works with the IRC Continuing Committee to develop a joint Congress in 2015 where the location provides access to both grassland and rangeland systems; and the program gives focus to priority topics within both bio-physical and socioeconomic themes. Several delegates spoke in favor of the Resolution.

With the successes of the joint meeting of the IGC and the IRC in China, in 2008, a resolution was presented at the XXIII Congress in New Delhi, India in 2015 as follows:

Resolution 12 (Carried unanimously)

Given the demonstrated benefits of the joint IGC-IRC 2008 meeting in China and considering the worldwide decreasing number of researchers as well as funds available for research in grassland and rangeland, the members of the XXII IGC recommend that, given a viable equal partnership between IRC and IGC, future IGC Continuing Committees make every endeavor to conduct joint activities with the IRC in order to maximize synergies in knowledge, practice, and resources.
"It is important to understand the terminology associated with grassland. Efforts have been made in the past to document it, and I commend those efforts, for I feel that there is a continuing need for clarifying terms and their use."

Dr. Robert F Barnes USDA-ARS, President of the XIV Congress, USA (Barnes, 1983)

Chapter 6 A Terminology for Grazing Lands and Grazing Animals

The realization that uniformity of terms and their definitions in grazing lands and for grazing animals was essential to clear communication can be documented well into the past. Progress toward this objective can be found in these and other publications (*FAO, Plant Protection Division,* 1965; Booysen, 1967; Heady, 1970; Kothmann, 1974; Ibraham, 1975; Hodgson, 1979; *Society for Range Management,* 1989; Trollope et al., 1990).

When the Sixth Congress left Europe and met in Pennsylvania, USA (1952), a trilingual glossary of scientific and agricultural terms was produced to aid in communication (<u>Congress Leaves Europe, page 21 to 22</u>). For the XIII International Grassland Congress in Leipzig (GDR), 1977, a Glossary of over 1,000 technical terms dealing with grassland, forage production, and animal nutrition was compiled (Appendix H). These terms were presented in five languages (German, Russian, English, French and Spanish) with many terms accompanied by an explanation or definition. This Glossary was primarily compiled from one that was issued for the XII IGC in Moscow and from the GDR'S reference book entitled Terminologie der Tierernährung und Futterproduktion (Terminology for Animal Nutrition and Feed *Production*; TGL, 1979). Their objective was to help Congress participants better understand each other. It was also an aid to translators and to assistants helping foreign guests. This was indeed a significant effort to improve the uniformity of terminology for the betterment of communication on an international scale. At the Business Meeting in Leipzig, A Recommendation to Future Grassland Congresses, prepared by R. J. Wilkins and N. E. Young (both Great Britain) was presented to, and accepted by the audience. The recommendation called for further efforts to expand and update the Glossary of terms in the context of grassland, forage production, and animal nutrition published already under the sponsorship of the XIII International Grassland Congress.

In his Presidential Address at the XIV International Grassland Congress in Kentucky, USA, 1981, Robert F Barnes emphasized the importance of understanding terminology associated with grasslands and recognized the efforts made in the past to document it. Although he commended these efforts, he suggested that there was a continuing need to clarify terms and their use. He listed several terms that needed clarification such as *Grasslands, Forages, Forage Crops, Pastures, Rangeland,* and *Range* and he suggested their definitions.

Each of these previous efforts, as well as many other published sources, highlighted the need to agree on uniformity in terms and their definitions. However, these individual efforts did not always agree with one another or with other published suggestions and they did little to bring about a broad consensus across the various groups working in grazing lands.

As research and discussions proliferated, so did terminology. Some terms dealt with measurements used in scientific research and in allocations allowed in numbers of animals per unit of land area or of forage present for meeting government agency regulations and/or rental agreements among producers. One such term is Animal Unit. A literature review reveals a number of different definitions used. It was during the XVI IGC in France when Dennis Minson (Australia) argued for a Standard Livestock Unit for defining Stocking Rate in Grazing Studies (Minson and Whiteman, 1989). He suggested that a Standard Livestock Unit be based on a non-lactating bovine weighing 500 kg. Minson pointed out in his discussion that in the USA an Animal Unit was defined on the basis of a 1000 lb cow (that would be 454 kg) and stated that we should "at least be using an even number." Other terms that caused repeated confusion included *Grazing Pressure* vs. *Stocking Rate, Stocking Methods* vs. Stocking Systems, Intensive or Extensive Stocking vs. Controlled Stocking and the use of Controlled Grazing as a synonym for Rotational Stocking. Even Grassland vs. *Rangeland* has caused confusion and in some places, they were considered to be the same thing. At the X International Grassland Congress in Helsinki, Finland, in 1966, Dr. William Davies, Vice-President of the Congress, pointed out that with regard to the arid regions of the tropics and subtropics, the term grasslands was a misnomer for the reason that in these regions, grass species are the least important constituents of the fodders eaten by the grazing animal.

Such discussions led to the need for clarification of terms and definitions not only within local communities but on a national and international basis. Clear and precise

communication, basic to good science and practice, was lacking and was leading to misunderstandings and erroneous conclusions and in some cases to sensitive feelings, frustrations, and even vocal disagreements.

During the 1980's, the Publications Committee of the American Forage and Grasslands Council (USA) took on the task of addressing the uniformity of terms and definitions used in the science, industry, and management of grazing lands and grazing animals.

Two guiding principles were accepted from the outset, which ultimately played a large role in allowing this Terminology Project to succeed. Acceptance of these two principles remains, today, essential to its success.

The first principle was, that to be usable and broadly accepted by those who used this terminology, this project must be undertaken by a broad representation of scientific societies, agencies, industries, practitioners, and others who, to the greatest extent possible, could speak for their representative groups. To be successful, it had to be a product of those who would use it – **not** a product of one group or individual and handed to the rest to accept. Although the terminology project began within the American Forage and Grassland Council, it immediately expanded to be the project and product of individuals who represented, as far as possible, the breadth of the Forage and Grazing Lands community. Thus, the first Forage and Grazing Terminology Committee was composed of representatives of six Scientific Societies, eight Governmental Agencies/Services, The Forage, Grassland, and Range Resources Committee, The Grazing Lands Forum, and two International members from Australia and New Zealand (<u>Appendix Table O-3</u>).

The second principle was that the terms and definitions addressed by this project would be confined to those that applied directly to the subject of grazing lands and grazing animals and that those terms and definitions would apply across all boundaries of individual scientific societies, industries, agencies, and individuals who would use this terminology. The common bond was, thus, grazing lands and grazing animals in which we all had an interest and a need to communicate clearly. Thus, there was no attempt to address terms or definitions that would apply uniquely to one group but not necessarily to another. We dealt only with those terms that would be used by all.

From the beginning, it was also the intent that, not only should this effort be national in scope, it should be ultimately an international effort. As a first step in a process, however, it was recognized that to do this from the beginning on an international basis would be overwhelming and not likely to succeed. There needed to be a beginning step that would provide the platform from which to ultimately move to an international effort. However, as a first move in that direction, invitations to participate were extended to a limited number of well-known international individuals who could begin the process of evaluating this on an international basis. Dr. John Hodgson (New Zealand) and Dr. Dennis Minson (Australia), both long-time members of the International Grassland Congress, accepted this invitation and provided inestimable help.

The committee held its first meeting during the XVI IGC in France in 1989.

Terminology for Grazing Lands and Grazing Animals was published by Pocahontas Press, Inc. Blacksburg, Virginia, USA (FGTC, 1991). Terms were grouped into four categories as follows: I. Terms for forages and grazing lands; II. Management concept terms; III. Terms of measurement, space, time or degree; and IV. Methods of grazing. It contained 106 terms with their definitions. Funding for this publication was provided by the Forage and Grassland Foundation, Lexington, Kentucky, USA (<u>page 57</u>).

Results of the Terminology Committee's efforts were reported at the XVII Congress in New Zealand and Australia in 1993. Dr. Dennis Minson suggested that a period of no fewer than two Congresses pass before any revision was attempted to allow time to test the acceptance of the now published terminology and to identify any areas that needed revisions or additions. Interest in an International version, however, prompted a Resolution to form a Task Force to pursue this objective.

The International Rangeland Congress was associated with the Terminology effort and was represented on the original Committee through several members of the Society for Range Management. At the V IRC, held in Salt Lake City, July 1995, a Resolution was passed in support of the ongoing effort to develop international uniformity of grazing terminology and requested a report of progress at the VI IRC in Townsville, Queensland, Australia in 1999.

As discussed previously, the IGC and the IRC were exploring the desirability of closer collaboration. This had led to Resolutions presented to the IRC in Townsville that endorsed the concept of closer cooperation with the IGC and that mechanisms for meeting common goals and objectives should be explored. Collaboration between the two Congresses on the '*International Terminology for Grazing Lands and Grazing Animals*' was an obvious opportunity to carry this out. With agreement between the two Congresses to take on this task, the membership of the Terminology Task Force was appointed jointly by Bob Clements (Australia) and Maureen Wolfson (South Africa), (Chairs, respectively, of the IGC and the IRC Continuing Committees). Letters of invitation to prospective members of the Task Force were sent out jointly by Clements and Wolfson on 24 November, 2000. Thus, with agreement by both the IGC and the IRC, the Task Force was appointed with Dr. Mort Kothmann (Department of

Rangeland Ecology & Management, Texas A&M University, College Station, USA) serving as chair (<u>Appendix Table 0-4</u>).

The objective of the Task Force was to review the published *Terminology for Grazing Lands and Grazing Animals* to identify terms and definitions that were not in the published version but that should be considered for inclusion in the Second Edition. They were further instructed to identify any terms or definitions that had surfaced as problematic and to examine these for possible revision. A key objective of the Second Edition was that it be international in scope as was the vision and intent following publication of the original version.

At the XIX International Grassland Congress São Pedro, São Paulo, Brazil, 2001, a report in the Business Meeting stated "On a positive note, one example of strong positive collaboration between the two Congresses is worth mentioning. Many delegates will recall that, in 1991, the Forage and Grazing Lands Committee published a book entitled *Terminology for Grazing Lands and Grazing Animals*. The committee was chaired by Dr. Vivien Allen (USA). This publication was the result of the combined efforts of six scientific societies in North America, numerous research organizations, and representatives from other countries. Recognizing that a revision of this book would be timely, the IGC and IRC are collaborating in a revision that will be published under the auspices of both Congresses. The team of writers is led by Dr. Mort Kothmann from Texas A&M University and contains representatives from both Congresses and five countries. This shared venture between the two Congresses is a good example of the benefits that could be achieved from greater collaboration."

At the XXI International Grassland Congress in China in 2008, and as directed by the membership of both Congresses, the International Forage and Grazing Terminology Committee was appointed to write the International Edition with Dr. Vivien Allen as Chair. The Committee was composed to be broadly representative of International membership in both the IGC and the IRC and suggestions for membership were reviewed by both Chairs of the IGC and the IRC Continuing Committees (Appendix Table 0-5). The Task Force, chaired by Dr. Kothmann, provided the results of their efforts to the new Terminology Committee and with the benefits of their efforts, revision of the first edition of Terminology began.

As with the first publication, guiding principles of broad representation and a strict adherence to terms and definitions directly related to grazing lands and grazing animals were again upheld. In addition, because of the international approach, the Committee anticipated that there would likely be multiple definitions for specific terms that would need explanation. It was agreed that a single definition for each term was desired and should be the standard to the greatest extent possible but, if this did not appear feasible, alternative definitions would be included. It was one of the achievements of this Committee's efforts that there were NO terms for which multiple definitions were required.

As requested at the joint meeting of the IGC and the IRC in China, the work of the committee was completed and was published in March, 2011, in *Grass and Forage Science*, the Journal of the British Grassland Society. One hundred and sixty-one terms and definitions were included. These were grouped into the following categories: 1. Grazing land terms; 2. Vegetation: descriptive terms; 3. Forage growth and harvest; 4. Forage nutritive value and intake; 5. Management of grazing lands; 6. Land-forage animal relationships; and 7. Stocking methods.

The following message was sent to both the IGC and the IRC.

"The Forage and Grazing Terminology Committee is pleased to report to the International Grassland Congress and the International Rangeland Congress that *An International Terminology for Grazing Lands and Grazing Animals* has been completed. This work has been published in the March, 2011, issue of *Grass and Forage Science*. Because of the financial support of the two Congresses and the Forage and Grassland Foundation, Lexington, KY, open access is provided through the electronic version of *Grass and Forage Science* so that this is freely available to everyone for use and may be copied with citation of source. It is hoped that organizations around the world with an interest in forages and grazing lands will provide a link to this publication on their websites to further encourage access and use to promote greater uniformity of these concepts and terms in the science and industry of grazing lands and grazing animals."

As requested by both Congresses, completion of *An International Terminology for Grazing Lands and Grazing Animals* was conveyed to the IX IRC in Argentina (2011) and the XXII IGC in Australia (2013). Dr. Caterina Batello, FAO (Italy) gave the final report at the IRC Congress in 2011. Dr. Garry Lacefield, Forage and Grassland Foundation, University of Kentucky, USA, gave the final report at the IGC Congress in Australia (2013).

Following publication, a series of translations were undertaken and are now available in Arabic, Chinese, French, German, Japanese, Russian, and Spanish. These translations are found as Supporting Information following the Wiley Online Library original version in English (Allen et al., 2011).

The Terminology Project has met with much success and continues to be among the most downloaded articles published in *Grass and Forage Science*. It has become the standard reference for use of these terms and definitions in several leading journals.

"Indeed, the mutual understanding engendered in a specialized Congress such as this sets in motion continuing intellectual and cultural currents of significance far beyond its declared scientific and economic purpose."

Dr. Milton S. Eisenhower, President, Pennsylvania State College, and President, American Association of Land Grant Colleges and Universities, Sixth Congress, USA (Eisenhower, 1952)

Chapter 7 Challenges and Opportunities

This book has detailed the many challenges and opportunities faced by grasslands and the International Grassland Congress over the last Century, how those challenges and opportunities were addressed, and how content of the Congresses has changed in response.

A dominant feature throughout the history of the Congress has been concern with the need to feed an increasing global population. This put high priority on increasing production of milk and meat from grassland while reducing or eliminating inputs of supplementary feeds. Improvements in grassland species and varieties, plant nutrition, and grassland management led to massive increases in herbage production from temperate and more recently tropical grasslands. Greater knowledge of interactions among grazing animals and the plants they graze and improved technologies for hay and particularly silage making have led to large improvements in utilization of the forage that has been grown.

Grasslands have historically and justifiably been viewed as a solution to major challenges. They can contribute to a healthy, stable and fertile soil, improved nutrient management, water catchment and quality, clean air, and biodiversity of plants, animals, and other biota in both native and imposed grasslands. Additionally, they provide an economical feed source not directly consumable by humans. Through the animals that graze forages, food, clothing, power to transport heavy burdens, and a source of wealth are provided to humans (Burton, 1986). To many peoples of the world, grasslands provide home, heritage, livelihood and a 'sense of place.'

The long-known use of grasslands in designing a less resource-dependent and a more environmentally and economically sustainable, intensified agriculture is now rapidly increasing in importance. The positive role of the grazing animal in maintaining the health and sustainability of the ecosystem is well documented. Long-term row crop monocultures have advantages of specialization and economies of scale but are shown increasingly to negatively impact soil health and quality, wildlife, biodiversity, and other natural resources. Bert Christie (Canada) reminded us that without grasslands, the "bread-baskets of today can become the dust bowls of tomorrow."

There are growing concerns involving livestock production systems where animals are fed high concentrate diets in confinement or as supplements to forages. Reducing grain fed to livestock was a key objective discussed in the earliest of the Congresses because such feeds could be directly consumed by humans. As quantity and efficiency of grain production increased in more recent years, feeding grains to livestock became a marketing opportunity for surplus grain while improving uniformity of animal products and encouraging consumers preferences for *grain-fed*. Too often, grain feeding has replaced forages due to subsidies and other mis-guided policies in non-sustainable systems.

Today, if global population continues its projected increase, more of this grain will be required for human consumption and competing uses must be reevaluated. Additionally, grains are now the basis of many industrial processes including ethanol production to lower dependence on petroleum-based fuels. Increasing grain production has limits, including competition for land, suitable environments, and consumption of resources, including water and energy.

Livestock systems that minimize or eliminate grain feeding can produce high quality *grass-fed* and *forage-finished* animal products. Such systems can be integrated into cropping systems to improve sustainability and also can make use of lands not suited to cultivation. Consumer concerns regarding appropriate animal care can be addressed. Health benefits to consumers of animal products result from forage-fed animals compared with those fed high grain diets.

This is not a new issue. Dr. Gordon Marten (USA) reminded us in 1981 that "ruminant animals are now competing with humans for grain and protein supplements" and that "The potential for forages to replace grains in ruminant feeding systems must be realized." Four years later in Japan, Dr. Iwao Nikki expressed concern that "nearly 500 million tons of grain, equivalent to about 40% of the total annual grain production in the world, is consumed as animal feed." This points to an enormous potential for increasing human food by replacing feed grains with increased forage, especially in ruminant diets, and to the importance of Grasslands in solving world food problems.

Mismanagement of grassland and misdirected intensification can produce negative effects, however, including soil degradation, desertification and salinization, reduction in water catchment and water quality, and reduced biodiversity. Professor Volkart was correctly concerned that "...in our efforts to improve and increase grasslands, we are led to destroy in many cases virgin nature, causing the disappearance of rare plants" (<u>Appendix N</u>).

Pressures on grasslands are rapidly increasing from continued population growth, escalating land values, and conversion to other uses, particularly continuous cropping and urban expansion. In his Opening Address at the XVII Congress in Australia (1993), Dr. Ray Brougham stressed that the world's dramatic increases in population "could be singularly the most important factor currently creating the most intense pressure on the world's grasslands." He pointed out that "economic motivations may be equally damaging," especially by those profit-motivated and ignorant of the damage done to our grasslands (<u>Appendix C-17</u>).

The need to conserve natural resources, including land, soil, and water, and the adverse effects of climate change have become critical issues. Research agendas and content of the Congresses have shifted to reflect these newer concerns and opportunities. Congress Proceedings indicate approaches that have been developed to mitigate adverse effects and to enhance positive effects of grasslands in the quest to achieve *sustainable intensification*.

Within the last few years, increases in non-meat, plant-based protein products are competing with animal protein from meat and milk. If this trend and the move towards more vegetarian diets continues, animal industries may suffer economic consequences with direct impacts on grazing lands if demands for livestock products decline. There is now public perception in some countries that livestock production is bad for the environment, and this is one of the factors contributing to people seeking to reduce meat in their diets. This trend may be counterbalanced, however, by the known nutritional benefits of animal products to the diet and consumers wellrecognized preferences for "natural" and "unadulterated" foods rather than manufactured non-natural food products. Only time will tell what the overall impact on grasslands may be.

While grassland research and content of the IGC have traditionally been concerned with use of grassland for livestock production, a much more multifunctional approach has been taken to grassland as we have moved into the 21st Century. This is reflected in an increased percentage of papers devoted to environment, socioeconomics and policy, land use systems, and information and technology transfer (page 123 to 124). Provision of services for the public good from grassland including biodiversity, clean air, and water have been previously mentioned. Opportunities for delivery of new

products from grassland are also coming into increased focus. For instance, the high potential for productivity of some grasses makes them an attractive option for production of biomass and biogas. The array of chemicals in grasses and other forage crops offer opportunities for new products, including pharmaceuticals, insecticides, and herbicides, and makes some of them feedstocks for *biorefineries*, including the possibility of extrusion and processing of juice from grasses and legumes for use by monogastric farm animals and humans. Nevertheless, the areas of research traditionally central to the International Grassland Congress will continue to be important as indicated by the views of delegates at the Congress in Australia in 2013. Areas for grassland research considered to have the highest priority were management of livestock production systems, soil-plant-animal relationships, species development, and weed management (<u>Table 2; Page 94</u>).

The contributions of Grassland to leisure, recreation, and wildlife habitat has long been recognized, but "farmed" grassland makes a major contribution to landscape aesthetics, and provides areas for walking, hunting, and other recreational pursuits, in addition to providing milk, meat, wool, leather, and other animal products. The IGC has not yet encompassed this aspect of grassland use in any significant way. Doubtless, priorities for grassland will continue to change over the years and the relative importance of these different aspects will differ among regions.

One characteristic of grassland research is the large number of disciplines needed for research programs to be effective, including the range of physical and biological sciences, mathematics, and socio-economics. This was recognized in 1960 by H.R.H. Prince Philip, Duke of Edinburgh, in his address to the Eighth Congress in Reading, UK, where he made reference to the "wide array of scientific techniques and disciplines that must all be integrated with plant and animal physiology."

Over the past years, much component research has provided a vast amount of knowledge that has had relevance to a number of different disciplines, and the need for such research continues. Increasingly, however, researchable questions must be asked within an integrated systems or landscape context that provides a platform where scientists from different disciplines, producers, and industries collaborate in a systems approach. Answers to some of today's most urgent questions can be best understood through the examination of the whole where outcomes potentially reflect the interrelationships of all parts of the functioning system. Furthermore, as highlighted by Peeters (2015) at the XXIII Congress in India, "It is rather clear that the traditional linear 'top-down' technology transfer from research to extension and farmers can no more be considered as a credible solution. Only holistic and participatory approaches have the ability to provide relevant answers." Such research must bring together a broad spectrum of academic disciplines, producers, and industries to answer both basic and applied questions on production and

environmental effects as well as economic and resource sustainability. Human components of these systems, compatibility with wildlife and other grassland uses, as well as quantity and quality of products produced must be included in the analysis and evaluation of the system.

A sustaining attraction of IGC has been the provision of a central focus where scientists from these different disciplines have been able to meet and provide their input to the total subject. The IGC was formed to provide a forum for the exchange of knowledge, ideas, and experience among those working with grasslands and their uses. As described by P. V. Cardon in 1952 it is "an opportunity for free and open discussion of commonly recognized but unsolved problems; ... a forum where findings, ideas, and experiences (can) be exchanged," and "where a mingling of minds" can "generate more potent activity." From the beginning, the Congress has been about information-sharing and networking with the Congress tours making important contributions to these exchanges. Within the Congress setting, younger scientists have the opportunity to meet and learn from scientists who are already well-known for their accomplishments. New ideas and perspectives are generated. The value of the Congress is maximized through opportunities for well-established members to mentor younger scientists, cultivate networks, and foster other activities. Participants are able to establish lifelong networks with peers and gain valuable experience presenting their work on a global stage.

Whilst electronic communication offers new opportunities for the exchange of information and knowledge, electronic communication should not become a substitute for the Congress itself. As Professor Falke knew when he organized the first meeting, there is no substitute for the synergism, the generation and exchange of new ideas, and the opportunities for networking that accrue to gathering together those who are addressing a common challenge and to see first-hand the uniqueness of the grasslands that the venue offers. The challenge is to use electronic communication to enhance effectiveness of the Congress possibly by stimulating interactions among scientists on a more continuing basis through, for instance, virtual working groups or webinars.

However, electronic communication is increasingly bridging the gap when in-person attendance is not possible. As we are writing this book, the world is dealing with a pandemic from the Covid-19 virus, which is making the gathering of people together an unacceptable risk. For this reason, the XXIV Congress, originally scheduled for Nairobi, Kenya, in 2020, has been delayed a year and will now be held in 2021 if circumstances permit. Many other meetings and Congresses are following this same action. Some Conferences are being held as virtual meetings. It will be of great interest to assess the extent to which such meetings give effective interactions and exchanges among delegates, key features of the normal Conference format.

Innovations within the IGC have included the holding of joint Congresses with the International Rangeland Congress and the incorporation of Workshops, Masterclasses, and other initiatives to involve younger scientists and help them develop. Some recent Congresses have also featured Forums that involve lead producers and other stakeholders. The linkage of the IGC Main Congress with more specialist Satellite Meetings, often joint with other organizations, was a feature of successful Congresses in Ireland and the UK in 2005 and Australia in 2013. This concept could possibly be extended as the combination provides opportunity for considering both wide global issues and more specialist discussion.

The IGC has from time to time sought to influence international policies and research funding levels, notably through the *Kyoto Appeal* (Appendix I) but the Congress has not generally adopted the role of political advocacy for grassland and grassland research. Should this change? This was questioned by John Hodgson (2001) who stated: "In the past it [IGC] has acted primarily as a medium for exchange of information and ideas about research and practice amongst grassland professionals. The question is, can we afford not to get involved in what might be termed grassland sociology and politics? If the IGC does not campaign for better balance in determining the allocation of resources of grassland research and development, and in the planning and administration of research programs, who will? And which agencies are better fitted than the IGC to promote the importance of grasslands as a moderating force in facing, for example, the issues involved in enhancing world food supply, conservation of soil and vegetation resources, and amelioration of global warming?"

The structure and management of the IGC would need to change if this wider role was adopted. At the XXI Congress in Australia, **Resolution 10** (supported unanimously) asked "That the IGC Continuing Committee establishes an advocacy strategy and capability with the mandate to keep grassland research a primary priority with governments, thereby making it easier for researchers to obtain funding."

Those attending an IGC have the opportunity to influence the future of grasslands and the Congress through the content of papers presented and published and dialogue at the Congress that can inspire follow-through long after the Congress has adjourned.

To identify the best approaches to solving the challenging problems of today, the International Grassland Congress must continue to be a forum to discuss and address these issues. Such discussions should include a wide array of stakeholders to find the best solutions to both global and local needs. Furthermore, effective transfer of this knowledge to the users of this information is essential to progress. As Sir Willoughby Norrie reminded us at the Seventh Congress in New Zealand (1956), "Grassland progress throughout the world depend(s) partly on the scientist, partly on the adviser and partly on the practitioner, but very largely on the practitioner" (Norrie, 1956).

Should the IGC take on the role of advocacy? Regardless, all those involved with grassland - including producers, educators, industry, agencies, grantors, policy makers, the news media, and grassland scientists - must speak out regarding the challenges that our grasslands face and the opportunities and essential services that they provide. To each of us, the challenge is to be proactive within our sphere of influence.

Throughout history, the inseparable relationship between grasslands and human survival has been demonstrated. In the words of Strecker (1913), "The origin of all human culture can ultimately be traced back to the grasses." From the Inaugural Meeting on, this crucial role of grasslands in the welfare of humanity has been expressed. Both Dr. Elofson in Sweden and Professor Stapledon in Wales demonstrated the vital strategic importance of grasslands in providing food during two World Wars. The relationship between grasslands and humanity has escalated and broadened in its importance over the years. Grasslands now address issues beyond the imagination of the founders of the IGC, and yet, today, grasslands are among our most endangered ecosystems. The sense of urgency to recognize the importance of grassland agriculture and its role in food security felt by the men who gathered in Leipzig in 1927 has lost none of its urgency today as we deal with the environmental impact of climate change, a diminishing natural resource base, an escalating population and food demand, and spiraling economic incentives to convert grasslands to other uses.

The founders of the International Grassland Congress initiated a Congress that survived and grew because it filled a critical need. Their vision and passion for a brighter and more secure future for humankind through solutions found in the grasslands is more relevant today than it was nearly 100 years ago. The International Grassland Congress remains vital to these issues and to the nurturing of the new generations of grasslanders who will address these critical challenges and opportunities into the future.

Appendix

- A Biographies
- **B** Invitational Letters
- C History through Speeches
- D Letter to Richard Geith
- E Statutes of the Association 1934
- **F** The Constitution
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- H The Leipzig Glossary of Terms
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Appendix A Biographies

Appendix A-1 Professor Friedrich Falke²¹

(1871 to 1948)

Geheimrat, Professor, Doctor of Philosophy, Friedrich Wilhelm August Karl Falke was



Friedrich August Falke, around 1940. (From the Archive of Leipzig University, FS N 2724.)

the son of a landowner. He was born 7 July, 1871, in Schwarzholz (Altmark, Germany). He entered the University of Halle (Saale) in 1890 and began his studies in Agriculture. He received his doctorate in 1895 under the direction of Julius Kühn, who at the time was considered the most important agricultural scientist in Germany. Dr. Falke's dissertation was on the feed value of brown hay.

After graduating, he taught as a lecturer for three years (1898 to 1901) at the Agricultural University Institute in Halle (Saale). It was in 1898 that he married Adelheid Weber. They became the parents of five daughters and one son. In 1901, he became Associate Professor of Agricultural Economics at the University

of Leipzig with a research focus on grazing.

Research interest in the development of intensive systems of grassland management in Germany dates back at least to 1895 (McConkey, 1931). One of the pioneers of intensive grazing systems, Professor Falke began his first experiment in 1899 and used 32 paddocks on which eight different fertilizers were applied four times in succession. Based on these results, in 1904, a further experiment began in which high producing dairy cows were divided from dry cows in a "leader-follower" grazing

²¹ Translation and interpretation of original materials by Dr. Dirk Philipp and Dr. Jürgen Pickert. **References and Information Sources:**

Dr. Jürgen Pickert (Personal Communication); Dr. Dirk Philipp (Personal Communication)

Augustin (2013) "Falke, Friedrich," in Sächsische Biografie, ed. from the Institute for Saxon History and Folklore. Retrieved 11 July, 2020, rom, <u>http://saebi.isgv.de/biografie/Friedrich Falke (1871-1948)</u>. Professorenkatalog der Universität Leipzig / Catalogus Professorum Lipsiensium (2020). In, Friedrich Wilhelm August Karl Falke. Faculty Catalogue of Leipzig University/Catalogus Professorum Lipsiensium. Published by the Chair for Modern History, Historical Seminar at Leipzig University. Retrieved 11 July, 2020, from, <u>http://research.uni-leipzig.de/catalogus-professorum-lipsiensium/leipzig/Falke 35/</u>.

https://de.wikipedia.org/wiki/Friedrich_Falke Includes pictures of Falke's pasture site established at Ehrenberg (Saxony) 1906. (Retrieved 11 July, 2020).

method within the system (McConkey, 1931). In 1906, Falke established a pasture site for cooperative grazing as a research and demonstration project for small size farmers in the Erzgebirge mountains at Ehrenberg (Saxony) (Falke, 1907; Lampeter, 1965). The project continued until 1960 and was reconstructed in 1996 (Riehl, 2006). At Leipzig University, Falke organized the first *German Training Course for Grassland Farmers on Pasture Management* in 1907 (Falke, 1929; Lampeter, 1965).

Professor Falke served as Chairman of the Field Cropping Department and the Committee for Pasture and Meadows of the German Agricultural Society. This enabled him to greatly extend the work on pasture management throughout Germany even before the First World War (WWI - 1914 to 1918). It was from this position that he extended the invitation to the inaugural Grassland meeting in 1927.

The war took him away from university life. Early in the war (1914) he became a combat officer with the rank of captain and was sent to the frontlines. He later became an economic officer in the administration of the German-occupied territories of Belgium. In 1918, Falke worked in a ministry in the Saxon government before he went back to Leipzig University. In that position, he had the title of *"Vortragender Rat"* (Vortragend meaning *reporting*). This meant that he was privileged to personally report, talk, or present information or proposals directly to the monarch and the chief representative of the government. In 1920, Falke returned to the University of Leipzig, now as full professor. From 1926 to 1927 he served as Dean of the Mathematics and Natural Sciences Department of the Faculty of Arts.

In 1927, Professor Falke assembled the I. *Tagung der Weide- und Wiesenwirte aus den nord- und mitteleuropäischen Ländern in Deutschland* (I. Meeting of the Pasture and Meadow Agriculturists from the North- and Central European Countries). The meeting addressed the growing need for cross-European cooperation in grassland agriculture. This landmark event escalated from 16 scientists representing 7 European countries to continued meetings on an international basis that are now the International Grassland Congresses of global dimensions and impact and the subject of this book. Professor Falke attended the second meeting in Sweden where he gave a talk and was elected Honorary President of this Congress. He was a member of the Executive Committee for the Fourth Congress in Wales at Aberystwyth in 1937.

From 1933 to 1937 he was appointed to Ankara, Turkey, where he organized the establishment of the Higher Agricultural Institute in Ankara. This was the first Western-style agricultural-veterinary school in Turkey.

Professor Falke died 10 March, 1948, at Arendsee (Altmark, Germany), not far from the village of Schwarzholz where he was born. Four days before his death, he had received a request from the Faculty of Arts and the University of Leipzig to participate in a significant role in the reconstruction of the Agricultural Institute. He died the year before the Fifth Congress was held in the Netherlands.



Memorial to Professor Doctor Falke the "Pioneer of Modern Pasture Management." Located in Schwarzholz (Altmark, Germany). (Provided by Dr. Jürgen Pickert.)

Appendix A-2 Dr. Anders Elofson²²

(1873 to 1957)

Anders Elofson of Uppsala, Sweden, was born in 1873 as a farmer's son in



Anders Elofson at age 80 years. (Provided by Peter Edling, grandson of Anders Elofson.)

Gunnarskog, a parish in the district of Värmland, Sweden. This small community still exists in 2020 with about 260 inhabitants (Wikipedia). In 1897, Elofson became an agronomist at Alnarp's Agricultural Institute. He served as a teacher and an administrator and became the director of the Swedish Seed Association. He served as First Assistant at the Swedish Seed Society in Svalöf from 1899 to 1901 and then as the Director of the Association's branch at Ultuna in Uppsala until 1912 when he was promoted to "State Consultant in Seed Production."

It was during this time that the cultivation of grass and the growing of seeds was attracting increasing attention in Sweden, and large numbers of seed varieties were introduced by this and other associations. He made numerous study trips and participated in research concerning seed

certification and seed quality. Dr. Elofson served as a public consultant in seed cultivation and played an active role in field production of seed.

Early in the 20th Century, Dr. Elofson studied at the Polytechnic in Zürich, now today's ETH. In 1930, he was granted the Doctor of Philosophy Degree (*honoris causa*) by the University of Leipzig. During the First World War (1914 to 1918), Dr. Elofson, along with several prominent estate owners who had co-operated in pioneer work for pasture improvement, founded the Swedish Grazing and Ley Association. This Association conducted extensive experiments in the field cultivation of grasses

²² References and Information Sources:

Peter Edling, Grandson of Anders Elofson (Personal Communication); Magnus Halling (Personal Communication).

McConkey (1931).

Gunnarskog, Retrieved 6 June, 2020, from, https://en.wikipedia.org/wiki/Gunnarskog. Tuvesson, M. Retrieved 12 July, 2020, from <u>https://www.ksla.se/anh/files/2013/08/Vallodlnigens-betydelse-inom-mosskulturen.pdf.</u>

Anders Elofson's Medal. *Kungl Academy of Forest and Agriculture*. Retrieved 12 July, 2020, from <u>https://www.ksla.se/priser-beloningar/akademiens-priser/anders-elofsons-medalj/</u>.

specially to help feed the people and to allow them to stay on the land. For a long time,

Dr. Elofson was the Association's driving force, its Secretary, and, from 1924, its Director. Much work was conducted to improve the economics of hay and pasture crops. Through cooperation with the Board of Agriculture and the Board of Forestry Care under the Ministry of Agriculture, Dr. Elofson worked to clear unproductive marginal lands, where pastures merged into the forests, to make highly productive pastures.



Clearing shrub on overgrown grazing area to

ed the produce more productive pastures. (Provided by Peter Edling)

Much experimental work investigated the

effects of different manures that highlighted the value of phosphorus on Swedish forages. Intensive nitrogen systems, botanical association studies, cutting versus grazing, cutting at different stages of growth, and management of the grazing animals were explored. Grazing was divided into three groups: (1) high production cows; (2) dry cows and young cattle; and, (3), followed by horses. A key feature of this work was the attempt to establish the value of pasture as a crop in comparison with other crops. The thinking and talking of *pasture as a crop* and in terms of *feeding units* became very important in accomplishing this recognition of forage value.

Because the Swedish Society that dealt with high organic soils (bog or peat) was increasingly interested in similar research, and because both associations were funded in part through state grants, the two associations merged in 1939. Dr. Elofson was involved in the initiation of Sweden's Seed Grower Association and the Association of Nordic Agricultural Researchers, serving as its President from 1918 to 1950.



The family of Anders Elofson (Provided by Peter Edling.)

Dr. Elofson was one of the four founders of the International Grassland Congress and served as its President in 1930 when the Congress met in Uppsala, Sweden. He was married to Katharina Schmidt, who was born in 1885 in Berlin-Marienfelde, where her father Karl was a leaseholder. They had two children, Marta and Olof (Peter Edling, Personal Communication).

Dr. Elofson retired in 1939 and died in Uppsala in 1957. He was known as a great

educator and teacher for which he received numerous awards and much recognition. Dr. Anders Elofson's passions were cultivated grasslands, particularly grazing, leys, and seed production.

Appendix A-3 Professor Albert Volkart²³

(1873 to 1951)

Albert Volkart was a great pioneer of Swiss agriculture. He was born in 1873 in



Albert Volkart. Picture taken in 1925. Photograph by Johannes Meiner. (Provided by Josef Nösberger) Zürich, Switzerland. Volkart began his studies at the agricultural department of the Polytechnic in Zürich (now ETH) in 1891. After his final examination in 1894, he became an assistant to Friedrich Gottlieb Stebler at this institution and later became a member of the Management Board. His research centered on the survival and competition between species in pasture and meadow mixtures in different soil and climatic conditions, and he made a major contribution to the understanding of grassland ecology. Special attention was given to the botanical composition of mountain pastures. His ecological approach and technique for survival studies was considered fundamental and dynamic and was credited with helping to develop a practical technique in grassland studies.

(Provided by Josef Nösberger.) In 1917, Volkart replaced Stebler in charge of the Swiss Seed Investigation Research Institute.²⁴ Three years later, the Swiss Seed Investigation Research Institute combined with the Swiss Agricultural Chemistry Research Institute to form the Swiss Agricultural Experimental Station Zürich-Oerlikon, with Volkart as the first Director. In 1925 he returned to ETH as Professor of Agronomy until his retirement in 1943.

He was President of the III International Grassland Congress held in Zürich, Switzerland in 1933. This was the meeting where the *Statute of the Society International Grassland Congress* (Appendix E) was written, stating that "The International Grassland Congress is a society with the purpose of enabling and fostering the exchange of the practical experiences and knowledge among experts related to grassland agriculture." It was also under his Presidency that the name became International Grassland Congress Association, and the role of the Congress was recognized internationally.

²³ References and Information Sources:

Josef Nösberger (Personal Communication).

Agroscope, Famous People, Retrieved 6 June, 2020, from, https://en.wikipedia.org/wiki/Agroscope.

²⁴ Friedrich Gottlieb Stebler (1842 – 1935) was the Founder of the first Swiss Seed Laboratory.

He was unable to attend the Fourth Congress in Aberystwyth in 1937; at the Final Business Meeting a message from Professor Volkart was read by Dr F. T. Wahlen, his successor at Oerlikon. He expressed great regret at not being able to attend because of his teaching duties at ETH, with particular disappointment at not being able to see the splendid work being carried out at Aberystwyth by Stapledon and his colleagues. In response, R. G. Stapledon commented that those who were acquainted with Professor Volkart knew that he was a man of very great knowledge, but of very few words. He paid tribute to Professor Volkart's work on grassland ecology and its importance for plant breeding and grassland management.

Appendix A-4 Sir R. George Stapledon²⁵

(1882 to 1960)

R. G. Stapledon was born 22 September, 1882, the youngest son of William Stapledon



R. George Stapledon, President of the Fourth International Grassland Congress. (From the archives of the Stapledon Memorial Trust.) and Mary Clibbert. His father was a shipping agent and his mother was the daughter of a shipbuilder. He was educated at United Services College, Westward Ho!, and Emmanuel College, Cambridge, where he studied natural sciences including geology, chemistry, and botany. His family's commercial interests influenced his early life, and from 1904 to 1906 he worked in Suez for the family firm. This was a turning point in his life, however. It was during this time that he developed a strong interest in agricultural independence or selfsufficiency. He argued that grasslands were "at the heart of successful agriculture which in turn was at the heart of Britain's economic and spiritual wellbeing." He was before his time in his interest in socio-economics and his concern with the role of grasslands in the whole rural economy.

Stapledon returned to Cambridge in 1908 to study agriculture; there he began his life's work in grasslands. In 1912, he moved to University College of Wales to head the newly created Department of Botany. Here, he married Doris Wood Bourne. From 1914 to 1918 he worked for the Board of Agriculture and Fisheries in London. While there, he was successful in getting them to initiate an Official Seed Testing Station for which he served as Director (Berry, 2015). With the start of the First World War, Stapledon was appointed advisor on grassland management to the newly established Food Production Department, whose objective was increasing domestic agricultural output.

Alan Hopkins (Personal Communication); Roger Wilkins (Personal Communication).

²⁵References and Information Sources:

Institute of Biological, Environmental & Rural Sciences (IBERS), Aberystwyth University. Our History: Landmarks in Agricultural, Biological and Land-based Studies at Aberystwyth. Retrieved 10 June, 2020, from <u>https://www.aber.ac.uk/en/ibers/about-us/history/</u>.

University of Reading. The Museum of English Rural Life, R. G. Stapledon Collection. Retrieved 12 Jan., 2021, from <u>https://www.reading.ac.uk/merl/collections/Archives A to Z/merl-D77 29.aspx</u>. Berry (2015).

In 1919, Stapledon was appointed Professor of Agricultural Botany at Aberystwyth, and became the first Director of the Welsh Plant Breeding Station and head of the Agricultural Botany Department at University College of Wales, Aberystwyth. It was here that he and his colleagues established the basic biology, ecology, and breeding systems of Gramineae. A range of grass and clover varieties that were to subsequently transform grasslands in Britain were bred. Under his leadership, the Welsh Plant Breeding Station acquired an international reputation for grassland and upland improvement.

In 1937, the Fourth International Grassland Congress was held at Aberystwyth, recognizing its preeminence as the center for land-based research in the science and technology of grassland and upland improvement. Professor Stapledon served as President of that Congress. In his Presidential Address, he described in detail the potential for ley farming incorporating the improved grass and clover varieties developed at the Welsh Plant Breeding Station.

Professor Stapledon considered the grasslands to be of vital strategic importance. If

Britain were to prepare for a future war, her grasslands could provide a reserve of fertility but would require great renovation to accomplish this. Against great opposition from economists, he implemented a scheme for the renovation of the uplands of Wales, thus, demonstrating the practical feasibility of land improvement (Moore-Colver, 2014). Through the renovation of the uplands in Wales, he provided a template for the postwar program of land improvement. During the Second



"Excursion to the Highlands in Wales during the International Grassland Congress. Congress president Prof. R.G. Stapledon is presenting. In the middle is Dr. Elofson." (From the Report of the Fourth Congress, provided by Peter Edling.)

World War, many members of the Agricultural Departments and the Welsh Plant Breeding Station, including Stapledon, were wholly focused on the Food Production Campaign. It was during this time that he encouraged ley farming, ploughing up permanent grassland with alternations between arable crops (mainly grains) and grass leys - often in 3-year rotations. The improved varieties bred at Aberystwyth were important to the success of this system. Following the war, the Minister of Agriculture stated that "without the achievements of Stapledon, Britain would have starved and could not have been capable of mounting any military challenge." Stapledon was widely recognized for his remarkable achievements. In 1939, he was elected a Fellow of the Royal Society and Knighted. He was a founding member and the first President of the British Grassland Society and was the 4th President of the International Grassland Congress. Late in his career, before his retirement in 1946, he was instrumental in persuading the government to set up *The Grassland Research Institute* at Hurley, Berkshire. His inspirational work, passion for the land, and his many accomplishments continue to influence scientists in grassland agriculture today.

Stapledon died 16 September, 1960. He left a legacy that has continued to help grassland science and the International Grassland Congress. The Stapledon Memorial Trust was set up to perpetuate the memory of Sir George and to promote agricultural research and education. The Trust has supported Travelling Fellowships that have helped many scientists from throughout the world gain research experience in other countries. It also supports meetings and publications relating to grassland. This has included grants to the International Grassland Congresses held in Canada in 1996, Ireland and the UK in 2005 and China in 2008.

Appendix A-5 Dr. ir. Derk Siewert Huizinga²⁶

(1879 to 1955)

Derk Siewert Huizinga was born 21 December, 1879, in Loppersum, province of



Derk Siewert Huizinga. President of the Fifth Congress (Source provided as footnote) Groningen, The Netherlands. He was the son of a farmer and this background in practical farming would guide him throughout his studies and career. He studied agronomy in Wageningen at what is now called Wageningen University and Research. At 26 years of age he married Petronella Jordens and they had four children.

He started his career as a teacher at different agricultural colleges. In 1907 he became Extension Officer for the province of Gelderland, as well as Director of the agricultural winter school in Zutphen.

In 1913 he moved to Surinam in South America to become Director of Agriculture for the Dutch West Indies. In 1919 he became Director of the Surinam Bank at Paramaribo and Delegate for the West Indies

Cultuurbank (Agricultural Bank). At the same time, he was a member of the Colonial States and Chairman of the Surinam Farmers Association.

He returned to The Netherlands in 1923 and became an Extension Officer again, but now for the province of Limburg. In 1931 he was appointed Inspector of Agricultural Education as well as Head of Agricultural Extension for the whole country. At the time of his retirement on 1 November, 1945, he was Director of Agricultural Education and Deputy Director of Agriculture of the Netherlands.

Huizinga was during his career main author or co-author of several publications, e.g. on Algemene Plantenteelt (General Crop Husbandry), De Nederlandse Taal Bij Haar Gebruik In De Landbouw (The Dutch Language as Used in Agriculture), Het Landbouwonderwijs (The Agricultural Education), Suriname: Het Landbouwonderwijs En De Landbouwvoorlichting (Surinam: The Agricultural Education and Extension). For his services and achievements in the field of Agriculture and Agricultural Education,

²⁶ References and Information Sources:

Written by Willem Prins (Personal Communication) with contributions by Agnes van den Pol – van Dasselaar and René Schils. Source of picture: D. S. Huizinga (1913) [Clipping.] The Netherlands in Portraits – Early 20th Century. Central Bureau for Genealogy. Retrieved 12 July, 2020, from, https://geheugen.delpher.nl/nl/geheugen/view?coll=ngvn&identifier=CBG01%3A9677.

the Senate of the Agricultural University made him doctor *honoris causa* in December, 1945. Dr. Huizinga became also a Knight in the Order of the Dutch Lion.

During his retirement he stayed active. As chairman of the Recovery Action Plan (1945 to 1947) as well as President-Curator (Chairman of Board of Governors, 1947 to 1951), he played an important part in the quick recovery of the Agricultural University, which had suffered much damage in Wageningen during the Second World War.

He was appointed President of the Fifth International Grassland Congress, which was held at Noordwijk, The Netherlands, in 1949. He had been present at the Fourth Congress in Aberystwyth, Wales, in 1937 and had extended the invitation to host the next Congress in The Netherlands in 1940. The Second World War prevented this from happening until 1949.

It was at this 1949 Congress that President Huizinga first proposed that a European Grassland Association be established, and he appointed a Committee to consider the matter. While this did not come to pass immediately, this organization was formed in 1963 and celebrated its 50-year history in 2013 (Prins and Kessler, 2014).

At nearly 76 years of age, Dr. Huizinga died on 21 November, 1955, in Velp.

Appendix A-6 Professor Richard Geith²⁷

(1900 to 1945)

Richard Geith was born on 11 December, 1900, in Hamburg, Germany. He studied



Richard Geith (Provided by Peter Edling.)

agriculture and became a grassland scientist under the direction of Professor Friedrich August Falke at the University of Leipzig, earning his PhD in 1930. In 1927, with the leadership of Professor Falke, the inaugural meeting of what would become the International Grassland Congress took place in Leipzig where both Mr. Geith and Professor Falke worked at the time. Thus, he was at the right stage of his career and in the right place to assist Professor Falke with this meeting. His valuable help was recognized by Professor Falke following this first meeting, as evidenced in Professor Falke's letter of thanks to Mr. Geith (<u>Appendix D</u>).

Richard Geith was married to Dora Marie Luise Naumann. His

wife was born in Zwickau, an industrial town in Saxony, Germany, on 3 October, 1905. Their marriage in Hamburg, on 17 June, 1930, was eight days before the second Pasture and Meadow Conference in Sweden, at which he was present. Dr. Elofson, in some introductory remarks, thanked Dr. Geith for his "diligent recording of the minutes."

Dr. Geith continued his association with the Grassland Congresses, "becoming Permanent Secretary of the Association" at the Third Congress in Zürich, Switzerland, in 1934 (Cardon, 1952). By virtue of this position, Dr. Geith also served on the Executive Committee of the Fourth Congress, held in Wales at Aberystwyth in 1937. He was re-elected as Organizer of the Central Office at this Congress.

After working in Leipzig, he moved to Berlin-Steglitz where he lived in 1939 with his wife and three daughters. From there he went to the research institute concerned with alpine areas in Admont, Austria, where he continued to work on grassland research. In 1940 he became Director and Professor of Grassland Studies at the Alpine Agriculture Institute at Admont. This was during the Second World War and Austria was under Anschluss (union) with Germany. Professor Geith's publications continued through 1941 when he was called for military service and his scientific career ended.

²⁷ References and Information Sources:

Jürgen Pickert (Personal Communication). Dirk Phillip (Personal Communication). Proceedings of the International Grassland Congresses for 1927, 1930, 1934 and 1937. (Cardon, 1952); (Bundesanstalt, Gumpenstein, 1997). <u>https://de.wikipedia.org/wiki/Richard Geith</u>

Professor Geith fell on 10 March, 1945, during the battles with the Soviet Army for the Donau Crossings (Danube River Crossings) in Cegléd near Budapest, Hungary, about 400 km from Admont. Professor Geith is buried in the German War Cemetery in Budaörs, Pest County, Hungary (Bundesanstalt, Gumpenstein, 1997).

Appendix B Invitational Letters

Appendix B-1 Professor Falke's Letter of Invitation²⁸

Invitation for the First Meeting of Pasture and Meadow Agriculturists from the North- and Central-European Countries²⁹

To get such a collaboration [in the field of grassland science] on its way, a letter was issued by the Field Cropping Department of the German Agricultural Society to about 50 accomplished and renowned experts of the Scandinavian countries, Sweden and Norway, from Denmark and Finland, Holland [Netherlands], Austria, and Switzerland, to hold the 1. Meeting of pasture and meadow agriculturists from the north- and central-European countries.

This letter had the following wording:

It has been suggested from various sides to mediate an exchange of scientific knowledge and practical experiences of pasture and meadow agriculturists [see further explanation of these terms at the end of this document]³⁰ from the north- and central-European countries. Equally, it would be desirable to link this to a discussion about joint proceedings for solving important questions. Similar work and research procedures could be established in those countries interested in pasture and meadow management to add authority to a deepening and widening of the usage of natural fodder sources in agricultural operations by joining forces than in the past. Without doubt, through this the yield capacity of soil on land dedicated to forage production could be largely extended, as the yields on those lands fall well short of other forms of agricultural land use. To achieve this, a first meeting in Germany is planned. We would like to ask you in the kindest terms to take part in this event.

Together with this meeting, a field tour shall be conducted to visit worthy grassland farms. The time frame scheduled for this will be May 21 – 31 of this year. We allowed ourselves to provide you an attached detailed timeline. For the [in-house] conference in Leipzig

²⁸ Letter of Invitation is in the Report of the First Meeting (DLG, 1929) published by the German Agricultural Society, Berlin. The letter itself was sent out in the spring of 1927 as indicated in the Report.

²⁹ Translated from the original by Dr. Dirk Philipp.

³⁰ This references the Report of the First Meeting (DLG, 1929)

on May 27 – 28, we ask that the representatives from each country supply a short report whose content is suited to stimulate further discussion. We would be grateful if you could draft such a report and would like to ask you to announce its respective topic soon. An overview of the reports will be communicated 10 days in advance of the conference.

For May 24 and 25, a visit to the trade fair of the German Agricultural Society in Dortmund is planned. The Board of the Directors of the German Agricultural Society is especially pleased to extend an invitation in the warmest terms for this trade fair.

We would be pleased if we would receive a positive reply from you with regard to taking part in this event in its entirety. Please send your reply to the Field Cropping Department of the German Agricultural Society, Berlin SW 11, Dessauer Straße 14.

German Agricultural Society,

Field Cropping Department

Prof. Dr. Falke

Chairman
Appendix B-2 Dr. Elofson's Letter of Invitation

Invitation for the 2. North- and Central-European Grassland Congress³¹

The participants of the first Conference elected the signee of this invitation [Elofson] on May 30, 1927, in Dresden as the President of the Second Conference. After some preparatory measures, experts from whom one expected to take part in such a conference were invited with the following letter:

It became clear more and more during past years that in some countries there has been an unexpected quantitative and qualitative improvement of on-farm- produced feed through a rational pasture and meadow management. Because experience also clearly showed that not only maintaining of the high output of the animals achieved to this point is possible through feed quality, but also a cheapening of animal production, it is understandable that the "grassland question" has become one of the most important problems of contemporary agriculture.

The relatively young grassland management [science], however, cannot be sustained through already established experimental data and experience as it is the case with other areas of agriculture. Because of the timely need for a swift and successful commercialization of agriculture and because scientific and technical processes complement each other under different situations, we welcome with great delight an exchange of views in this area.

After the invitation of the field cropping department of the German Agricultural Society through Geheimrat Falke, Leipzig, occurred during the time between May 21 and May 31, 1927, in Leipzig and other locations, the First Conference of the pasture and meadow managers from the north- and central-European countries occurred. There it was agreed to plan for an informal repetition, and president for the next session and meeting—which by now could be declared a conference—was entrusted to the signee [Elofson] at the last final session in Dresden, Germany.

³¹ Translated from the original (DLG, 1933) by Dr. Dirk Philipp.

It was determined to hold a Second Meeting and excursions during the time from June 24 to July 2 here in Sweden, and after that continue with excursions in Denmark from July 3 to July 5. The way I and other gentlemen charged with the planning thought out the framework of the program is shown in Appendix 1.

I am convinced that the participants will get to know our efforts in a thorough fashion, as in Stockholm the fair for agriculture, forest management, and horticulture as well as industry and art, and in Copenhagen the anniversary agricultural fair can be visited.

Those gentlemen who would like to visit the Stockholm Fair in greater depth are encouraged to do this through a preferred earlier arrival. I will organize a visit for all participants well ahead of time.

According to information we received, we believe that you have interest in the planned meeting, and because the participation of experts from different countries in the light of an extension of knowledge and skills is desirable, I have the pleasure to invite you.

A more detailed program will be mailed at a later point. With the hope of a receiving a positive response very soon at the following address Svenska Betes och Vallföreningen, Uppsala, signed:

Ultuna - Uppsala, May 12th, 1930

For the Second North- and Central-European Grassland Congress;

Signed: A. Elofson

Appendix C History Through Remarks Given by Presidents, Chairs of the Continuing Committees, and Selected Other Addresses

The following collection of key speeches from each Congress are quoted exactly as printed in the Congress Proceedings, thus, no additional indicators of quotations are included.

Appendix C-1 Inaugural Meeting – 1927



(Reference: DLG, 1929)

I. Tagung der Weide- und Wiesenwirte aus den nord- und mitteleuropäischen Ländern in Deutschland

(I. Meeting of the Pasture and Meadow Agriculturists from the North- and Central European Countries, 21 to 31, May 1927((DLG,1929) ³²

Opening Address (Falke, 1929)

Dr. Friedrich A. Falke, Professor, German Agricultural Society, Field Cropping Department, Leipzig Germany; President of the Inaugural Meeting.

Dear meeting participants!

There is certainly no proof needed that the most valuable part of the national wealth is the land and soil; because already based on its non-multiplicity characteristics soil must have an extraordinary value. The high appreciation of land and soil in the context of our national economy requires however, that the land is being used in a near optimal way, so that it can fulfill its purpose of serving one's nation welfare. We see, when we look around in today's agriculture that the agriculturist strives to increase the output from the land and yield where possible.

If we contemplate the various branches of land use forms, we find that not all of them are treated equally. It is striking that especially the natural use of the land – and as such we can describe the gain of fodder from perennial forage croppings, pastures and meadows – is the least developed.

Forage production is, on perennial as well as on annual arable forage cropland, in comparison with other procedures, underdeveloped. We should, however, promote this form of land use with all our power, because the fruits it bears are the foundation of livestock husbandry, whose products already enjoy increasing demand in north and central-European countries for years. The importance of livestock agriculture for feeding the nation is steadily increasing, not only because our population is growing, but also because the wealth is increasing through hard work and progress in the industry, trade and craftsmanship. With increasing wealth, nutritional standards increase as well that find its expression in an increased demand for animal products. This increased demand seeks our livestock industry to fulfil with the greatest ambition, but in doing so loses sight of the proven principle that it has to support itself

³² Translated from the original (DLG, 1929) by Dr. Dirk Philipp.

with feed derived from their own farming. Besides livestock feed grown on their own, large quantities of purchased feeds are being used, so that our livestock husbandry became dependent on the world market. Where this kind of strategy leads, Germany has experienced during the war in an all-to-painful manner. Our livestock industry was in a great manner dependent on the world market and purchased feedstuffs of almost 1 billion Reichsmark. This was a grave commercial and national economic mistake that literally doomed our livestock industry and in extension our national food security. The sufficient nourishment of the country from its own agriculture is the first basis for welfare, work-sharing, and diligence of one's people. Because of this, especially the feed sources derived from our soils need to be made useful for our livestock. The high consumption of purchased feed is proof that the production of feed of our soils are neither qualitatively nor quantitatively sufficient. Our soils, however, are capable of an unimagined increase in productivity, but not through an increase in cultivated area, but through development and optimization of cultivation as well as correct use and assessment. A similar intensity is required in producing feed as is the case already with cereal and tuber crops production. The intensive feeding that is currently achieved with purchased feeds must be covered through an intensification of forage crop production. Big tasks in this direction are not only to produce larger quantities of feed on our soil, but also to increase the content of valuable protein in our feeds.

Through such a better use of our soil resources will not only the purchase of feeds be drastically reduced, in many cases made almost obsolete, and the economic balance relieved, but also a gain in higher-quality feed achieved that is suited to shape a profitable agriculture. With the currently critical situation of agriculture, it is equally important to increase output while keeping it as economical as possible to stay competitive. That from our soils gained feed is the least expensive feed which we can utilize; it is less expensive than commercially purchased feed.

In particular, all of those characteristics apply to that on our natural forage cropping land, pasture and meadow produced feed, at which we will have to focus our attention. This promises success, as we have not paid attention enough so far to the perennial forage cropping areas.

In light of these comprehensive challenges, the Field Cropping Department of the German Agricultural Society recognizes the energetic and focused development of grassland agriculture as a particular pressing task. Because of the fact that in the northern and central European countries the challenges in these areas are for all intents and purposes the same, it is in particular recognized, after several encouragements to the assembly, to reach hands for an exchange of scientific knowledge and practical experiences with the experts from the mentioned countries and through a bundling of forces to disseminate and deepen the utilization of the

natural feed sources with more emphasis than before. One of the characteristics of agriculture is that it doesn't know proprietary trade secrets such as other industries. This is because the [existing] quantity of soil cannot be increased, that we all should strive to make use of each square meter for nourishing an increasing population with the best utilization possible. As agriculturists, we don't need to be bound by our borders that limit our experience but should rather pursue the perfect use of soil resources that is leading us to joining efforts. Such an encounter for joint work efforts will be facilitated and made easy if the representatives from each country are connected through cultural heritage. Therefore, the Field Cropping Department of the German Agricultural Society allowed to invite well-known and recognized authorities from nations of Germanic origin to a first meeting of pasture and meadow agriculturists from north and central European countries. To our delight everyone followed our call. I have, therefore, the honor to welcome you here on behalf of the German Agricultural Society: the gentlemen from Sweden, Norway, Denmark and Finland, from Switzerland and from Austria. Welcome all from our heart, connected through the intellectual and economic basis of our Germanic culture! To our regret, we cannot welcome the representatives from the Netherlands, who initially promised their participation, but at the last moment were unable to come. I don't need to express much further, how much we regret not seeing them among our guests.

I also welcome the representatives of the State of Saxony, through which our field study tour will lead, at our conference. In particular I would like to express my gratitude, pleasure, and delight to see the Ministerial Undersecretary Dr. Klien who represents the Saxon Department of Commerce among us. Please allow me to mention before this exceptional assembly that the pasture and meadow management enjoyed a particular promotion through the Department of Commerce in Saxony, for which to say thank you is a delightful duty. Hopefully we can continue to enjoy a forward-looking furtherance of a livestock industry in our nation, which counts for 320 inhabitants per square kilometer, that successfully can support itself through its own soil resources.

I furthermore welcome the representatives of the Saxon Chamber of Agriculture. I also welcome the representatives of the City of Leipzig, which among large German cities owns the most agriculturally utilized land.

It is my pleasure to welcome all of you, not only on behalf of the German Agricultural Society, but also in the name of the Agricultural Institute of the University of Leipzig, in which facilities our conference takes place. The current executive director of the institute, Prof. Dr. Zade, unfortunately is still at the agricultural fair in Dortmund; he asked me to extend his welcoming remarks to you and at the same time sends his regrets of not being able to be here personally. You will find a small booklet about Studies of Agriculture at the University of Leipzig that reflects the efforts by the Ministry of Education to foster research and education at our university with all resources possible.

As we assemble here today in this auditorium, a special memory comes to mind. Contemporary grazing management and intensive forage production are measures in our agriculture that were introduced at the beginning of the century. In western Germany, it was the well-known Mr. Schneider-Kleeberg who was a pioneer in grazing management. In the east, in Silesia [nowadays south-western Poland] Mr. Gabarth made a similar impact and here in Saxony, I myself sought to pave the way for an intensive grazing management. The first course on grazing management took place in 1907 right here in this auditorium. I interpret this as a positive sign that the first meeting of the pasture and meadow agriculturists hailing from the north and central European countries, after 20 years, again takes place in these halls. The first course about intensive grazing management was the general start for the introduction of intensive grazing management in Germany. May the 1st Meeting of the Pasture and Meadow Agriculturists that is taking place here, be the starting point for the [exchange] of knowledge and skills in the wide-ranging area of pasture and meadow management [what they essentially mean is grazing and hay lands] and forage production among the nations of the Germanic culture! We want to set ourselves the aim of achieving the highest form of soil utilization for the pasture and meadow management as well as forage production in view of the tight connection between soil resource use and the habits of our civilizations, because nations with the highest developed soil utilization were also culturally highly developed.

May then our conference perhaps contribute to help elevate the utilization of soil resources and with that paving the way for the Germanic culture, so it can flourish to the highest evolvement for the benefit of our countries and the nations of earth.

Here upon, the Ministerial Undersecretary of the Saxon Department of Commerce Dr. Klien welcomes the representatives from the different countries and takes the opportunity of inviting them to a banquet in Dresden as the final event of the conference. An additional welcoming was issued on behalf of the Chamber of Agriculture for the Free State of Saxony through the President of the Leipzig county office, Estate Owner Friedrich von Hirschfeld.

Appendix C-2 Second Meeting – 1930



(Reference: DLG, 1933)

2. Tagung der Weide- und Wiesenwirte aus den nord- und mitteleuropäischen Ländern in Schweden und Dänemark vom 25. Juni bis 5. Juli 1930

(2. Conference of the Pasture and Meadow Agriculturists from the North and Central European Countries in Sweden and Denmark 25 June to 5 July 1930.)³³

Opening Remarks (Elofson, In: DLG, 1933)

Dr. Anders Elofson, Director of the Swedish Grazing and Ley Association; President of the Second Meeting.

As the president of this Second Grassland Congress, presented by experts from various countries, I have the honor to welcome you. I do not have to assure you that it is a great pleasure for us to contribute to the cooperation of various nations, of which we are not only expecting a development of our professional knowledge in one of the first areas of human activity, but also expecting a mutual understanding among the nations. In this sense I welcome you, esteemed attendees, with the warmest regards, convinced that you have sympathy for the weak parts of our Swedish work, but are also ready to strive for progress towards a common welfare under full acknowledgment of the equality of honest diligence.

Of course, it may appear ambitious that I dared to invite the congress to Ultuna, Uppsala, since our institute is not even fully equipped yet. This shortcoming, however, has to do with circumstances outside my powers. I risked inviting you since I know that we come together for discussions, as said by Geheimrat Falke when he called us graciously to the First Conference in Leipzig, "for an exchange of scientific knowledge and practical experience with experts from different countries." I believe by the way that the road to wisdom does not necessarily have to go through model farms or model institutes.

Our institute nevertheless can serve as proof of our earnest understanding of grassland agriculture as well as for the fact that here in Sweden we want to devote ourselves to basic [research] questions more successfully than before. And that this first event in this institute serves the noble purpose of extending our knowledge is especially valuable.

³³ Translated from the original (DLG, 1933) by Dr. Dirk Philipp.

The initiator of this kind of cooperation, His Magnificence Geheimrat Falke, has not arrived yet to my great regret due to professional duties at the University of Leipzig. However, I would like to remind you of his richly deserved, devotional work for the cause of agriculture. We are looking forward to his coming; even more, as his experiences will be presented in a talk to our benefit. I believe that you will agree with me when I suggest electing His Magnificence Geheimrat Prof. Dr. Falke, who in the year 1927 showed us the way for an organized cooperation, to Honorary President of this congress.

With the hope we are granted a few enjoyable, unconstrained, and successful days here in the North, I declare the Second Grassland Congress inaugurated.

Subsequent to the inauguration, Geheimrat Prof. Dr. Falke, Leipzig was elected as honorary president, and Dr. Wahlen, Zürich, was elected as second [vice] president.

Appendix C-3 III Congress – 1934



ELVA, (1934)

Verhandlungsbericht des III. Grünlandkongresses der nord- und mitteleuropäischen Länder in der Schweiz 18. bis 20. Juli 1934

IIIrd. Grassland-Conference of the North and Central European Countries in Switzerland, July 18th to 20th 1934

Opening Remarks (ELVA, 1934).

Dr. Albert Volkart, Professor of Agronomy, ETH, Zürich; President of the Third Congress

The efforts made by British scientists towards the furtherance of forage culture date back at least as far as those made by the French, and although we in Switzerland had formerly not had the same close contact with Great Britain as we had with France, yet now its influence with us is in evidence. From Great Britain have been introduced to us a number of the most important forage plants, and there we learnt particularly the sowing of grass and clover mixtures. In the author of the Hortus Gramineous Woburnensis, George Sinclair, we know and esteem the pioneer in the field of experiments with forage culture, and of agricultural experiments generally.

Thus, it is a great pleasure to us today to be able to greet at our congress a number of participants hailing from English speaking countries who will take part in our discussions, and acquaint us with the results of their research work.

While our scientific pursuits bring us into close touch with the realm of nature, yet they often cause in us a certain wistful feeling, inasmuch as by our efforts to improve and increase the pastureland we are led to destroy in many cases virgin nature, causing thereby the disappearance of rare plants. It is probably especially the English people who feel this conflict, they who have such an open eye for the beauties of primitive nature.

During our forthcoming tour we shall have an opportunity of showing you many of the beauties of our country. But I would entreat you not to conclude from what you are going to see, that everywhere in Switzerland hostelry and what is connected with it stands in the foreground! Even we Swiss, when in search of relaxation, prefer rather to turn to spots, such as the Persian Poet sang about, rendered by the English translator thus: -

Here with a Loaf of Bread beneath the Bough A Flask of Wine, a Book of Verse-And Thou Beside me singing in the Wilderness -And Wilderness is Paradise enow.³⁴

What is true of the English people, is of course no less true of the people of North America! I am fully aware of the fact that the Americans have the greatest supply of wilderness in their country. And since it is our task to convert such wilderness into tilled land, surely America is also in this sense the land of unlimited possibilities.

I do hope that our friends from Great Britain, the North of America and from Africa will all be gratified with the progress of our congress and will thereby be induced to collaborate with us also in future in the good cause!

³⁴ Enow: Meaning Enough. Middle English origin before 1050.

Appendix C-4 Fourth Congress -1937

Fourth International Grassland Congress Association, Aberystwyth, Wales, 1937

Presidential Address (Stapledon, 1937)

Professor Reginald George Stapledon, Head of Agricultural Botany Department, University College of Wales, Aberystwyth; Director, Welsh Plant Breeding Station, Aberystwyth; President of the Fourth Congress

Greenness is the subject of my address, for grass is greener and more variedly and more vitally green than anything in the whole wide world, and green is the vital colour. Young succulent grass is the prince of feeds. Over an enormous area of the world grass is the foundation of the agricultural industry, and perhaps almost everywhere it should be the foundation. Research may well make this possible - yes, possible everywhere.

Grass (and when I say grass I mean, of course, grass and clover) properly used ensures soil fertility, grass marries the soil to the animal and the solid foundation of agriculture is the marriage of animal and soil. That spells humus. While again grass properly employed counters the devastating influences of erosion.

I am proud indeed to welcome you here to grassy Wales. Though Wales, I hasten to add, is not proud of her grasslands. Indeed, for my own part, and speaking as one who has spent twenty-five years conducting research on grassland in Wales, I must admit I find the condition of the grasslands of this country as a whole, and not only of Wales, deeply humbling. But then Great Britain you see, and the untold benefit of some of you here present, has always liked to finance agriculture anywhere, everywhere, except within her own shores.

I have travelled more than a little, and I know something of grasslands in general, but I have not travelled or seen as much as I should have liked, and I can express no wellinformed opinions on many types of the world's grasslands.

I have however come to this opinion, and I believe it to be just, nay more, fundamental, that the only rational approach to the problems of grassland (the practical problems and the research problems), is the wide regional approach.

The first necessity is to classify our grasslands, and to understand their interrelations, and then to work and to plan on the basis of clearly defined regions - natural regions. The proper use of grass and of grassland is a matter of systems of farming, and therefore of facilities. It is a matter essentially of the right implements, the right fertilizers and pre-eminently of the right seeds. More than this, it is a matter of usage and custom; systems of land tenure; methods of marketing and a hundred other things, all of which can only be appreciated properly and tackled successfully on a regional basis. What is generally essential is to discredit old fashions and to introduce new fashions. In this country all manner of old-fashioned clauses in leases are, for example, a great handicap to the introduction of new and long-overdue methods. In the matter of seed, the essential thing is to use the right strain of the comparatively few species that really suit the needs of any well-defined natural region. To organize this is by no means an affair only of plant breeding. The plant breeding to be of the maximum benefit should, however, be conducted in the region it is proposed to serve. It is only by chance, for example, if anything we breed here at Aberystwyth suits say Natal, North America or Norway, and if it does appear to do so at the first flush some plant disease- a rust form, say - may quite decisively intervene. Exploration yes, and the bringing of new species and of new genes of tried species into every region, but the selection and plant breeding must be conducted within the regions. What we want is not a world-wide interchange of commercial seeds with their limited variability, but a world-wide interchange of genes. It is probably near the truth to say that there is hardly a region in the whole world that has yet got the best combination of agriculturally useful genes in its grassland plants, while I make bold to hazard the opinion that there are many regions in the world that have not even yet got the right species to work. But of this again presently.

I am sure of this, however, that a general world interchange of commercial grassland seeds is bad for the grasslands of the world. It has admittedly done good in the past, it was necessary in the opening up of new countries, but it has also been responsible for a great deal of harm. I agree with Dr. Wilcox that "nations can live at home" in all manner of respects, and in no respect are they better advised so to do (and as far as possible) than in that of the grassland seeds.

I have implied that the first necessity is to map and classify our grasslands, and this is true the whole world over.

I regard this question of mapping of prime importance. We have mapped the whole of Wales, and my first intention was to devote my Presidential Address almost entirely to a detailed discussion of our method - for I believe they are good methods and as methods are applicable the whole world over. Our maps are, however, on view at the exhibit, and I hope Mr. Davies, who has been primarily responsible for the method and the work, and myself, will have the opportunities of explaining our aims and methods to those who are particularly interested, both around the maps and out on the hills and fields.

So much for mapping. I shall now venture some remarks upon the general problems of grassland, and all said and done, the basic problems are the same the world over. Of necessity I shall have to be selective and I conceive it as being my business to generalize, and as you will all have abundant opportunities amongst yourselves for correcting me, I shall not be afraid of generalizing here and there on insufficient evidence.

The outstanding feature of grassland is its complexity. It is impossible to isolate the factors, and I doubt if it will lead us very far if we attempt unduly to isolate the factors - on the farm and on the ranges all factors interact. Hardly ever do we attempt to grow a single grassland species by itself. I like to grow *Lolium italicum* by itself for winter keep, and we are here experimenting with growing *Phleum pratense* (our S.48) in cultivated drills for winter keep, but this is incidental, and cannot now be discussed. As all of us grow at least 2 to 3, 4 or more species together to make a sward, competition always enters into the matter. And always, always, always there is the grazing animal.

Soil, climate, grazing animal. Which of these three is the most important factor? Most emphatically the grazing animal! Manure right, sow right and manage the grazing animal wrong and you are nowhere. Without the grazing animal there would be no grassland worthy of the name anywhere in the world. Management is therefore the key to the solution of the whole grassland problem. The real point is this, that the animal makes for itself its own grassland. It is because of this that I say there are regions in the world not yet using the right species (apart from the right genes of the right species). By management entirely alter the conditions, make good lime deficiency, make good phosphatic, and if necessary potassic deficiency, make conditions above everything favorable for a leguminous plant; make it possible to hold animals to the ground, then you can begin to consider introducing and maintaining species hitherto unthought of.

I believe, and I say this not lightly or without experience, that there are many range areas in the world where it would pay best and where more stock could be carried, and that stock in better health, if about three-quarter or more of the area were let go wild and completely unstocked, and if real and tremendous things were undertaken on well-selected remaining areas. In effect, that is what we are doing here on the Welsh hills, and we are successfully introducing proper grassland species, including, of course, wild white clover (*Trifolium repens*), where such species have never before gained a footing. We talk about grass and grassland. No grassland is worthy of the name, and indeed is hardly worth bothering with, unless a legume is at work. Find or breed the right legume for every corner of the world and you have tolerably good grassland in every corner of the world. Make the conditions suitable for the legume and manage the sward to favour the legume as well as to feed the animal, and everything else will be easy - the battle will be won.

This is indeed a sweeping generalization, but prove me wrong who can, for not nearly enough work has been done in exchanging legumes all over the world, and in making conditions favorable for legumes, or in breeding legumes.

So much for the geographical problem as I see it; now for the domestic problem, the problem that affects everybody. The domestic problem is clearly threefold. Firstly, how to produce grass at those seasons of the year when it is most urgently wanted; secondly, how to use and to farm grass with a view not merely to maintaining, but with a view always and progressively to increasing soil fertility, and, thirdly, how to manage grass so that the animal always has offered to it young, rapidly growing and succulent grass of maximum nutritive value.

The whole problem, I repeat, resolves itself into management. Each of the above desiderata (something desired as essential) calls first and foremost for rotational treatment. Rotational treatment of a farm as a whole, and of individual fields. Rotation *in time and rotation in space*. The always doing of something this month with a view to obtaining some definite result two or three months later. Always, too, the need of the sward must rank as of an importance at least equal to the day-by day needs of the animal. By adoption a system of rotational grazing - intermittent with proper periods "on" and proper periods "off" - the animal can be given somewhere everyday what it requires, and the swards need never suffer. One further point, swards will recover from the most villainous of malpractices if such malpractices are not too long continued, and if they are not put into operation at precisely the same time of the year, year after year. Hence the need for rotational management all over the farm. Incidentally, I may here interject that I do not hold with using fields continuously as pastures or continuously as hay meadows; to do so is an offence against the basal idea of rotation in time. For rotation in time, I regard as the most fundamental of all grassland principles, and yet, and perhaps on most grasslands, especially on the ranges and open hills, the management is essentially the same month for month, year after year, for generation after generation. Ridiculous folly indefinitely perpetrated in the end enforces a heavy but just retribution, and all over the world millions of acres stand as doleful witness of agricultural practices conducted on a faulty and undeviating time schedule.

So much in general with reference to my three desiderata; now for the particular, and I will deal first with my No. 2, *Soil Fertility*, for in the last resort on this do "grass when it was wanted" and "succulent and nutritious grass" so largely depend.

I have said that to ensure soil fertility we need to marry our stock to the soil, and the cheapest and most effective way to do this is to plough up all grasslands that will take the plough at regular intervals. Always before ploughing up graze as hard as possible for some months, in order to impregnate the soil with urine and excrement - with what Mr. Bruce Levy so aptly describes as *stock nitrogen*. Having turned the sod over, apply lime, harrow in, and you will have made and spread an admirable compost all over your field. Now do what you like. Cash this fertility, or some of it, where you can in a corn or other crop, or sow straight down to grass again, and cash your fertility in more luxuriant grass and build up yet more fertility. I hold that permanent grass where it is possible and, on all grounds, reasonable to plough is wrong in theory, wrong in fact, is uneconomic and ridiculous. Of course, you cannot plough up all the permanent grass, grazings and ranges in the whole world, but with the tractor and modern implements you can plough in all manner of unheard-of-places and under all manner of difficult conditions. Manifestly it would be madness to plough up many types of range country, as that would be to invite certain soil erosion, but such is far from true of all range country. And suppose you can establish a thicker sod than ever before, and establish it quickly, and in the non-erosion season. While with a view simply to the introduction of new species, it is often sufficient merely heavily to cultivate and scratch. Pray remember you can plough up and put straight down to grass again perfectly well, and pray remember also that the best top dressing of all is that put on the soil itself at the time of sowing seed (I am not now referring to applications of inorganic nitrogen applied to bring grass at some wanted time). How often to plough up is a matter of circumstances and condition. Once in 100 years is better than never; once in twenty years better still, and once in ten years often quite sufficient. Plough more frequently than once in ten years and you begin to be scientific, progressive, and a farmer in the very truth, for then amongst other things you can begin to avail yourself of the labours of the plant breeder, and if you do things properly you are going to build up fertility at a prodigious pace. You can farm on the basis of temporary leys of from one to six or eight years' duration, and produce productive grass at all those times of the year that climatic condition permit stock to graze out of doors. The production of winter grass in telling quantity is, for example, a very real project under the climatic conditions of this country.

In regard to "grass when it is wanted" and "succulent and nutritious grass," I will be very brief, for I have already detained you far too long.

The production of short succulent grass, and at times of the year when most needed, is a refinement of pasture management that is applicable in all its intricate complexity only to the true grassy-clovery swards of the more temperate regions - to the field of our farmlands. It is to grass of this sort that I am now explicitly referring - to grass in the main consisting of the well-tried European species; species tolerant to and

actually thriving best under well-regulated heavy grazing and heavy trampling, the species that call aloud for and prosper exceedingly only when amply assured of stock nitrogen.

The production of short grass is then just a matter of rotational and intensive grazing; of intermittent grazing with heavy urination, followed by adequate periods of rest. Once a year the plants must be allowed to grow away to permit adequate root growth. The botanical composition of any more or less permanent or long-duration sward will be a function (almost a direct function) of the times of the year it is grazed hardest, and of the times of the year it is rested. If on any field these times are the same year after year, the number of species will automatically become very restricted, and probably in the interest of the ration and of seasonal spread-over will become much too restricted and automatically less and less grass will be developed just when it is most needed. If you proceed to accentuate this time factor by applying nitrogen always at the same date, very soon you will kill out the particular species which respond best to nitrogen applied at that particular date - such species or strains will be literally grazed to death. So once more I say, never on long duration swards and on permanent pastures do the same things to the same date programme on the same field for over two years in succession - *rotation in time again*! It is often a very sound practice to adhere to a time schedule for two or even three years in succession on short levs (levs of up to three years' duration), for when you have ruined such levs you plough them up. Hence one of the outstanding advantages of short leys. Short leys are intended to do a certain thing, and when they will do this thing no longer you plough them up - and I daresay that is about the best of all rules for the management of the grasslands of our farms.

Short grass at different and at all times of the year, and especially at the most difficult times - that is my last point, and I think the most important point of all, and it is one that offers tremendous scope for detailed research.

There are two main avenues of approach, the one by employing special seeds mixtures designed in the main to cater for a particular and short period of the year (once more the glory of comparatively short leys, and the justification of the plant breeder), and the other so to manure and so to rest particular fields that they do in fact have grass to offer at the particular date demanded by the grazing schedule.

I will give two examples of special "time" seeds mixtures. At this Station we advocate comparatively simple seeds mixtures, and we have achieved great success with one consisting only of our Station bred leafy perennial rye-grass (*Lolium perenne*) (Dr. Jenkin's S.23), rough-stalked meadow grass (*Poa trivialis*) and wild white clover (*Trifolium repens*). In some years the sward so produced (as is common with *L. perenne*) tends to go short in July and August. We have however found that another

excellent simple mixture is one made up of our Station bred meadow fescue (*Festuca pratensis*) (S.53); Dr. Jenkin's pasture-hay timothy (*Phleum pratense*) (S.48) and wild white clover (*T. repens*); this gives palatable and productive grazing all through the season, and in July and August considerably outyields the *L. perenne* mixture. A mixture consisting of our Station bred *Alopecurus pratensis* (S.56); our Station bred red fescue (*Festuca rubra*) (S.59), and wild white clover (*T. repens*) remains wonderfully winter-green and gives an unusual amount of leafage in late February and during March - that to cater for the winter.

As to resting for particular periods, I will take as my example the production of winter grass in this country, for our climate permits of out-wintering. We in this country are now drying spring and summer grass for the winter, and I am inclined to say why not grow winter grass for the winter and convert it *in situ*? It can be done already, despite the fact that the plant breeder has hardly begun to show his hand in this matter.

What is wanted is winter-green strains and then the plan is to rest the fields completely as from about the middle of August or not later than towards the end of September. By the use of proper strains, resting at the right time and properly manuring, we here at Aberystwyth have obtained grass in situ available from Christmas to the end of March, with a crude protein content of from about 14 to as high as 20 per cent of the dry matter. The yield per acre of this sort of grass then available has on occasion exceeded 3,500 lb. of dry matter. Thus, with a range of fields a great deal of grass of high quality can be made available all the winter. Much better winter grass, and more of it, can be obtained from young leys sown with the right strains than from permanent pastures.

In our experience much better winter grass is obtained by resting a pasture which has been heavily grazed and saturated with *stock nitrogen* for some time than from aftermath. If aftermath is wanted for winter grass such aftermath should not be allowed to grow straight on from after hay harvest, but the field should be grazed heavily as soon as it will hold stock after harvest, given a dose of stock nitrogen in fact, and then put-up for winter grass. At the time of putting up for winter grass we always dress with about I cwt. to the acre of nitro-chalk - as a supplement to stock nitrogen in roganic nitrogen is invaluable.

I have rather daringly covered a very wide field, and I have (although partly in the interest of brevity) most daringly generalized. I am sure you will appreciate the fact that anything of truth or value that I may have been able to say is due almost entirely to the untiring efforts and competency of my colleagues. They do the work; I do the talking. I think I have said enough to justify the belief that all of us here present are engaged in the study of a very great science; our concern is, however, much more than

that; we are concerned also with a very great art, and more still, *this* our enterprise is of prime sociological significance and importance.

If the peoples of the world, and to a man, are indeed to be adequately fed, with fresh food of the highest quality, and balanced in every respect, then the enormous acreage of the world that stands in grassland of every character, and of no character at all, must be brought to play its full part. It is not only grass itself that is so essential as a feed, but it is the whole acreage under grass that must be made to yield to more intensive treatment. To an ever-increasing extent this acreage must be made to produce better and better grass, and also other necessary crops.

Appendix C-5 Fifth Congress – 1949

Fifth International Grassland Congress, Netherlands, 1949

Inaugural Address (Mansholt, 1949)

His Excellency S. L. Mansholt, Minister of Agriculture, Food and Fisheries, Netherlands

Among the crops contributing to the nutrition of mankind grasses take a very prominent place, though they are unsuitable for human consumption as such. That place is important not only in regard to quantity, but quality also has to be taken into consideration.

Experts on nutrition hold different opinions in many respects, but they all agree upon the great significance of milk in the human diet. As to meat there may be more divergence of opinion, but people usually appreciate it so highly that its consumption has actually no connection with the conceptions of dietitians. The production of milk and meat on a large scale is inconceivable without herbage, and finally commodities like wool, leather, felt, glue etc. are ultimately nothing but products of grassland.

Altogether it is quite an impressive array, impressive both in quantity and variety. So, it is understandable that the introductory notes to the well-known guide for the determination of grasses by Strecker (Strecker, W. 1913) contains the following sentence printed in bold type: *Die Grundlage aller menschlichen Kultur ist schlielich in den Grasern zu suchen*. (The origin of all human culture can ultimately be traced back to the grasses.)

Grassland management in many respects (is) distinct from the management of arable land, but the most conspicuous difference is that on arable land in general only one crop is grown at a time, whereas on grassland many kinds of plants take part in composing a sward. In arable farming even different varieties are carefully kept apart, while in one and the same pasture or meadow not only a large number of varieties but even a large number of different species grow side by side. Species filling the gaps are complementary to those making a thin sward. Some species are bottom grasses and others are top grasses. Here there has been established what might be called a natural team spirit between plants. An advantage of grasses, as compared with other crops, is that they cover the soil at all seasons and therefore start growth as soon as minimum requirements in regard to temperature and moisture are satisfied. For that reason, the yield of good grassland can easily exceed the yields obtained from most arable crops. In practice, however, this possibility is usually not fully utilized. The yield of many pastures is lower than that of arable land.

The improvement in grassland yields up to the present is mainly due to better manuring, but there are other ways of increasing them, affording many openings for further research and experimentation in order to attain higher gross yields, and also to acquire higher profits from those yields.

Grassland research is still in its infancy, and especially in densely populated countries like the Netherlands people are aware of the great importance of that research. Therefore, I am very glad indeed that this Congress is meeting in the Netherlands.

In our country only a quarter hectare of cultivated land is available per capita, and consequently it is of the utmost importance to us that every hectare of cultivated land, be it grassland or arable land, is properly utilized.

During the war and also in the first few years after the war, our grasslands have been suffering from inadequate supplies of manure. More serious, however was the direct damage caused by violence and evacuation, leading to devastation or dilapidation of farms, but the greatest harm was done by inundations. Over 10 percent of the cultivated area in the Netherlands has been flooded, one-third of this by salt water.

About 60,000 ha of grassland had to be sown down again or at least to be restored by seeding in the old sod. I am not quoting these figures as an excuse that there are still grasslands which have not yet completely recovered, but I quote them because I am proud that we have already succeeded in obliterating the traces of war to such an extent.

At present prospects of making progress within a short period by aiming at higher yields are better with grass than with arable crops. Considering that over half the area of cultivated land in the Netherlands is under grass and also bearing in mind the small area available per capita, it is obvious that grassland research is of the utmost importance to our nation.

Nor is the position fully reflected yet, as a considerable part of our land is unsuitable for arable farming and in the regions concerned grassland management is therefore a matter of "to be or not to be" to the farmers.

And even now the whole story has not yet been told. As yields of arable land improve, needs in regard to organic manure increase. Stable manure is important as it sustains the humus content of the soil. Large quantities of stable manure are available only if

much livestock is kept, and much livestock can be fed only if the grasslands are producing high yields.

But there is still more to be said about the organic matter cycle. That cycle is interfered with and disturbed by man, especially in a densely populated country like the Netherlands. Considering the ever-growing urban population, our experience is far from encouraging in this respect. Town refuse is only partly returned to the land. Owing to the rapid growth of the population and more particularly to rapid spread of the towns, public health services have to meet high demands. From their point of view, it is of paramount importance, of course, to remove refuse completely and quickly. Discharge into the sea and burning are radical solutions of the problems involved but are not in the interest of agriculture.

So far, we have only partly succeeded in settling this controversy by compromise; as a matter of fact we hardly dare expect the complete success of our endeavors. It stands to reason, therefore, that an abundant production of farmyard manure by a large number of livestock, to be fed on the produce of an extensive area of good quality grassland will remain of the utmost importance in our country.

Mankind owes a great deal to those who have been willing to dedicate all their time and energy to the solution of grassland problems.

It may be true that the questions arising in this province are confusing, but it is certainly not at all difficult to find an interesting and important problem as a subject of investigation or experimentation. It cannot be denied, either, that many problems are so closely related that only in rare cases will it be possible to find a solution for one single problem to the direct benefit of practical farming, so that in many cases the research worker does not enjoy the pleasure of seeing the results of his work applied in practice.

A breeder engaged in the improvement of a species of grass for example, has to exert himself as much as a breeder of improved arable crops, but when he has finished, the question will arise at once whether the new strain or variety will thrive in a community of grasses composing a sward. The good characters the breeder has been able to combine in his new type have to fit in with the characters of other types represented in the sward.

When we have succeeded in raising the gross yields of grassland, also, the composition of the grass will have changed, e.g., its protein content may have gone up. Fundamentally the higher yield and the higher protein content of the grasses are virtues, but they will become of great importance only if, by proper management, we succeed in adapting them to the nutritional needs of livestock.

Investigations in grassland management are concerned with many problems almost encroaching upon husbandry, such as rotational grazing, rationed grazing, ensilage, artificial drying, haymaking, etc.

In realizing all this, we become confused by the many problems all closely related and influencing one another, and the question arises whether it will ever be possible to get to know all these things and to arrange the knowledge so that it will be applicable in practice by farmers.

On the other hand, when we realize to what extent yields of grassland have increased during the last 25 years, I believe that we can face the future with confidence.

In view of the multitude of problems and their close relationship, I fully realize that research workers keenly feel the need to meet each other from time to time in order to have a better opportunity of comparing notes and exchanging knowledge than is afforded by publications in periodicals.

In opening this Congress, I wish you success in your deliberations, and as to the delegates who come from abroad, I wish them a pleasant sojourn in our country.

Appendix C-6 Sixth Congress - 1952

Sixth International Grassland Congress, Pennsylvania State College, Pennsylvania, USA, 1952

Address of Welcome (Brannan, 1952)

The Honorable Charles F. Brannan, Secretary of Agriculture of the United States

It is my very great privilege to bring you the greetings of President Truman and to extend to you his warm wishes for a most successful and fruitful Grassland Congress. The United States is happy indeed to join with other countries of the world in the full and free exchange of technical experience and knowledge directed toward agricultural improvement and particularly to the work of making nutritious and useful grass grow in ever greater abundance for the benefit of the world's people.

We hope and are confident that this Sixth Congress will live up to the fine record of progress and achievement that has been made in the previous five international meetings held in various European countries. Many of our people attended one or more of these Congresses. They returned home with a very kindly feeling for their hosts and friends abroad, and we are eager now to repay what we can of this debt of hospitality by making your stay here as pleasant and satisfying as it is in our power to do. They returned with an infectious zeal for and faith in our cooperative capacity to make better use of the world's land resources for the enhancement of man's wellbeing and his greater dignity.

Grass as one of our statesmen said some 80 years ago, "is the forgiveness of nature – her constant benediction. It yields no fruit in earth or air, and yet should its harvest fail for a single year, famine would depopulate the world." I think that statement sums up very well why you scientists and agriculturists from so many nations are meeting here at Pennsylvania State College this week.

I do not have to tell any of you that a grassland agriculture is a sound agriculture and that a grassland program is a program in the people's interest. We all know that. We all know that for farmers a good grassland program means lower production costs and higher income. For consumers it means better diets. For the nation with such a program it means greater assurance of a permanent food supply.

This Sixth International Grassland Congress is providing an opportunity for all the nations represented here to obtain facts of importance in developing a more balanced

agricultural economy, a more profitable livestock industry, a higher level of nutrition for their people, and better methods of conserving land and water resources. It is another example of the desire of people in many parts of the world to work together for the common good of all.

We have in this Congress a truly cooperative effort. We have here an example of cooperation on an international basis, that is self-evident in your presence and in the participation in this Congress by so many nations and by the FAO or the United Nations.

But we also have here an example of very fruitful cooperation within our own national borders. Not only have the agencies and departments of our national government worked together, but business people and commercial firms have helped make this Congress possible by doing many things that government agencies could not do, and by providing funds for these activities. You will see many amazing displays and demonstrations here, some by manufacturers, and others by government agencies and agricultural institutions.

In this connection let me pay a special tribute to those representatives of business who have given much of their time, energy and resourcefulness to make this Congress a success. This group has been led by Mr. Wilbur Carlson, Chairman of the Finance and Tours Committee, who has labored tirelessly and effectively.

This same sort of cooperation has prevailed in the national grassland program, sponsored by the land-grant colleges and the Department of Agriculture which, in the 2 years since I began, has already proved that the possibilities for grassland expansion are even larger than we had formerly dared to hope.

And a special tribute is due to Dr. Eisenhower and the administration and the personnel of Pennsylvania State College to whom we are all deeply indebted for making these fine facilities available, and for so many other contributions.

As you well know, the world has been making some progress in increasing food production, but it is not going ahead fast enough. Most of the world's people have been eating less in recent years than they did before World War II.

The progress that could be made under ideal conditions with the knowledge and techniques now available is simply staggering to the imagination. But we cannot hope for ideal conditions – nor can we wait for them. We must start from where we are and do the best we can under practical, existing circumstances.

It is clear that a great new effort is called for in which the countries of the entire free world will share their technical advances with one another for longtime mutual progress as well as for very practical immediate gain.

We have full confidence in the ultimate success of such congresses as this to aid in bringing about better world economic conditions. Nevertheless, we all realize, I am sure, that this Congress is not a pushbutton activity which will instantaneously release the bounty of peace and plenty upon the heads of people everywhere. This gathering and exchange of ideas will not work miracles and it will require hard work and sacrifice to bring its promise into reality.

We know from our own experience in the United States that one of the great potentials for increased food production is in grassland. Here in our own country we have a billion acres of grassland, but we are getting a far smaller proportion of the potential yields from grass than we are from cropland. It has been estimated that we are getting only about 25 percent of the real potential out of our pastures, rangelands, and meadows. Our scientists tell me that we are about a quarter century behind in the development of our grassland, compared with the advances made in other aspects of agriculture.

Because grasslands are so important to the increased production of livestock and livestock products the U.S. Department of Agriculture, in cooperation with the land-grant colleges, launched a 10-point Better Grassland program about 2 years ago. I know you will hear a full discussion of this program by those who are most intimately connected with it, so I will not presume to go into its details. I would like to point out, however, that we now have well-defined grassland programs going forward in each of our 48 States. Upwards of one-fourth of our grassland has already been improved by one or more of the recommended practices. Nevertheless, we know that there is need to initiate improvement work, or to accelerate improvement work already under way, on about 90 percent of our grassland acres.

In the light of our record on the use and improvement of grassland, it would ill behoove us in the United States to seek to tell the people of other nations what they should do in order to use their pastures more profitably.

We have no such intention. We desire only to share and to learn.

You will find no Iron Curtain – no curtain of any sort – around the facts of any technical agricultural advances we may have developed in this country. On the contrary, you will find an eagerness to exchange knowledge, and a sense of indebtedness for all that our men and women of science have learned from the men and women of science throughout the world.

We freely acknowledge our debt to the world for the crops we grow, for many of the grasses that today cover our pastures. We can never forget that we have borrowed grasses from Europe and Africa, alfalfa from Turkey, clovers from Iran and Korea.

You will find here, I feel sure, the attitude that someone has cleverly expressed as follows: "Knowledge is the only instrument of production that is not subject to the law of diminishing returns."

As I welcome you, on behalf of the President of the United States and for myself, may I express the hope that this Congress shall stand before the world as a symbol of mankind's capacity for betterment, as a sign for mankind's determination to build and to share progress.

May this Congress indicate to all men, our united intention to move forward in these areas: Where there is hunger – to help people produce more food. Where there are wasted and neglected resources – to help restore and build fertility. Where there is ignorance of agricultural techniques – to help spread knowledge. Where there is discord – to help sow real peace.

May this Congress supply part of the answers to the ever-present questions: Where shall we look for peace? Where shall we seek and find hope for that better world which is the object of man's historic search?

May this be a Congress that asks searching questions in the knowledge that it is only by seeking the truth that we shall find it.

May this Congress take for its own the words of Kipling:

I had six honest serving men They taught me all I knew: Their names were Where and What and When, And Why and How and Who.

For us who are now living, these are critical times. But not only the present, the future also hangs in the balance.

What we do, and what we fail to do, will mold the lives of our children and of their children.

That is why we must continue to do all in our power not only to build a peace in our time but for world conditions of heath, prosperity, and security which will foster permanent peace, lasting peace – peace, with God's help, for all time.

Appendix C-7 Seventh Congress - 1956

Seventh International Grassland Congress, Palmerston North, New Zealand, 1956

Chairman's Address (Levy, 1956)

Sir E. Bruce Levy, Founder and Director of the Grasslands Division of the Department of Scientific and Industrial Research in New Zealand; Chairman of the Seventh International Grassland Congress

Sir Bruce Levy began his address referring to the deep honor it was to him as chairman to represent the organising committee on such an auspicious grassland occasion and to welcome so many of the world's leading lights on grassland lore and fame.

Sir Levy informed the delegates that The New Zealand Government had liberally financed the congress, placed its specialist staffs and facilities at the disposal of the organising and working committees, and generously named the New Zealand Grassland Association as host body. Major sections of the farming industry had contributed liberal monetary grants as a token of what world grassland research has meant to the farming industry of New Zealand. Aesthetically we could not have done better than accept the magnificent setting and facilities of Massey Agricultural College granted by the University of New Zealand for our deliberations he said.

International orgaisations frequently arose from the inspirations of one or a few, said Sir Bruce, in tracing the rise of the International Grassland Congress:

Four men in Europe visited one another in rotation in different countries to discuss grassland problems and techniques in pasture experimentation. In 1927, two of these, Dr. A. Elofson of Uppsala, Sweden, and Professor A. Falke of Leipzig, Germany, took the initiative and the First Grassland Congress was held that year at Leipzig. In 1934 at the Third Congress in Switzerland it was decided to widen the scope of the congress to an international basis, the Fourth Grassland Congress in Britain in 1937 being truly international in character.

Sir Bruce Levy observed, It must be a source of great delight to Dr. Elofson and maybe to the late Professor Falke, to see their initial efforts at grassland co-operation spread to this land at the uttermost outpost of the earth.

From the USA, the seat of the Sixth International Grassland Congress, greetings were sent to Dr. Elofson, and perhaps this congress will not forget it's still living founder and Dr. F. T. Wahlen of Zürich, who, with his Swiss colleagues, did much to raise the European Grassland Congress to international status.

We are gathered here at head of nation level, at head of State level, at University level, at the highest agricultural level, and at world scientific level to honour world grasslands themselves, and this is not too great an honour to bestow upon the grasslands of the world. They stand 'twixt a world of plenty and a world of famine; between a land surface of green oases and a land of desert; between surface soil stability and accelerated erosion.

It had taken two major wars to show man's dependence on agriculture and to place the science and practice of food production on a plane equal in importance to mechanical industry, the professions, and other equally honourable and important walks of life. Food production came nigh to being the limiting factor in human progress. It was a major duty of such an exalted gathering to see that the food supply of the world more than keeps pace with the human demand or on a plane equal and fair to all humanity.

Many of you have come a long way to attend this congress and to see our grasslands and scientific institutions related to research in grassland and in the conversion of grass to animal products. It may be unkind, perhaps unfair, to some of you from hard ecological climates and habitats to view the New Zealand pasture scene, but we would like to think there are at least some fundamental principles in the production and utilization of grass that will be of very great interest if not of very great benefit to you.

The whole of our grassland fabric was based, said Sir Bruce, on the simple symbiotic phenomenon that stock needs grass and grass needs stock. In the absence or sparseness of each both the grass and the stock were poor, but in the abundance of both, grass and stock thrived.

I would not hesitate to say New Zealand provides a clearer picture of the interdependence of minerals, clovers, grasses, and stock that any other country of the world. If you get the symbiotic relationship well into your system I have no hesitation in saying you will have gained something to help pattern your own grassland economy on a sound ecological basis. You cannot take our climate with you, but you can take lessons that a favourable grassland climate reveals and how that symbiosis of climate, minerals, clovers, grasses, and stock works and co-operates.

In the best of our tussock grasslands you may see a vegetation delicately poised in equilibrium with its harder environment and you may see the disastrous results of pressing that unstable association too far. You may see just how far these areas may
be improved and rendered more stable and more attuned to the grazing animal, and in this also there may be lessons of value to the harder habitat areas of the world.

You will be interested to study the land form of New Zealand and no doubt there will be many prophecies of disaster. You will perhaps see evidences of former periods of accelerated erosion on our hill complex of ridges and gullies, and on the river-built plains, with rivers that have in the past transported large quantities of soil and rock to build those river plains. It will be interesting to get your confirmation or doubts and misgivings that this surface veneer of turf and its roots will prove adequate to preserve the land surface for all time.

There might be some techniques in the researches, some genes in the stud clovers, stud grasses, and even stud stock of this favoured land, said Sir Bruce, that might aid at least certain countries just a little hard in climate to give greater growth vigour and production than their European prototypes growing in a climate too hard to allow new genes to develop and express themselves.

I feel confident, however, of a few things you will enjoy here. You will enjoy many of our transitions from forest, fern and scrub to grass. You will wonder at and acclaim the masses of stock our improved grasslands can support. You will see our many further potentialities. You will feel the kindly warmth of our sunshine and perhaps experience the gentle rains that are the life stream of the turf. In addition you may feel the warmth of our hospitality and the regard New Zealand has for all nations on the earth.

Appendix C-8 Eighth Congress - 1960

Eighth International Grassland Congress, Reading, UK, 1960

Opening Ceremony, (H.R.H Prince Philip, 1961)

H.R.H. The Prince Philip, Duke of Edinburgh; President of the Eighth International Grassland Congress

Mr. Chancellor and Ladies and Gentlemen,

My first and very pleasant duty as President of the 8th International Grassland Congress is to offer a very warm and friendly welcome to all the delegates who have come from abroad. There are 600 Members and 110 Associate Members and 300 Day Members; over 500 of these have come from 52 overseas countries. They seem to have managed to find the time, and I hope they managed to find someone else to provide the money, to attend this Congress. This very widespread interest in the latest developments in the science and practice of grassland management is most encouraging and I have no doubt at all that what you are going to see and hear between now and the 21st July will amply justify your long journeys.

I can only imagine that the rather late scientific interest in grassland husbandry is due to the fact that grazing is the oldest and probably the simplest and most primitive form of agriculture. Grazing in the primitive sense needs no machinery or instruments of any kind, while even the simplest form of crop production needs a whole series of tools which later developed naturally into machines. I think it would also be true to say that grassland investigation demands the use of the widest range of scientific techniques. Climatology and microbial biochemistry, soil physics and plant genetics to mention only a fraction of the departments involved, have all to be integrated with the findings of animal and plant physiology. It is perhaps not surprising therefore that grassland husbandry has only had the full attention of science during the last 50 years. In fact, it is probably the combination of the development of scientific techniques with the growing need to farm more intensively that has been responsible for the relatively recent revolution in grassland management.

It is not unexpected to find that most of the progress in this subject has been made in temperate climates and in relatively advanced industrial countries. There is obviously still much to be done, but I am certain that the areas with the greatest potential for development lie in the tropical and sub-tropical climates. I was very interested to see that tropical grassland problems were given serious consideration at the last Congress meeting in New Zealand and I very much hope that this present Congress will hear more about this subject. Talking about the last Congress I am reminded that it was the 4th Congress which was the last to be held in this country, under the Presidency of Sir George Stapledon who we are very sorry to hear is not well, but I am sure that the Congress would like to send him a message.

The rate of progress of investigations into tropical grassland problems can be expected to be fairly rapid, but the real difficulty is going to be in the application of the knowledge uncovered by these investigations. We have all heard the heart-cry of the agricultural scientist that farmers are stick-in-the-muds and refuse to apply scientific knowledge. I am slightly on the farmer's side in this! I believe that most progressive and intelligent farmers do their best to apply new knowledge, but it is one thing to perfect a laboratory experiment and it is quite another to try and integrate it into the operations of a mixed farm. I have already said that grassland investigation needs the widest range of scientific techniques, but in many farms, grassland is only one aspect of the business of farming.

If we have these difficulties in this country, it does not need much imagination to think of the problems that are going to arise in trying to improve tropical grassland. A direct jump to the latest techniques needing the latest expensive machinery is too great and I would urge that this problem should be tackled in stages and each stage adapted to local conditions. None of this of course applies to areas in tropical climates farmed by European methods or under European control. At least, I hope it doesn't. I don't expect all of you to agree but I am inclined to believe that no scientific organization is doing its job properly unless it takes a very active interest in the application of its` findings. It is very tempting simply to turn out stuff and then expect somebody else to do something about it. 'Invent a better mousetrap and the world will beat a path to your door' is a very convenient slogan but it is very far from the truth. Scientific organizations, not individual scientists, are wasting their time unless they are prepared to go out and convince the users that they can provide substantial help.

The investigations into the problems of tropical grassland should be relatively easy. The real problem is going to be the introduction of new methods into the sometimes rather primitive agricultural systems of the developing countries. The very fact that the efficient use of grass depends upon it being processed further by animals before it is suitable for human food only makes the problem more complicated. I know that a team led by Pirie of Rothamsted is trying to produce an edible protein direct from herbage, and I wish him every success, but I would have said that human nature being what it is, human diet is more likely to be affected by the availability of appetizing food rather than scientifically wholesome food. And I rather suspect that the same sort of thing applies to animals also. It is fairly easy to work out what is theoretically necessary for each type of animal but that doesn't necessarily mean that this sort of diet automatically improves the quantity and quality of the product whether it is milk, beef or mutton. However, I am sure that with the increasing knowledge of animal requirements it may ultimately be possible to define precisely or more precisely the optimum composition of herbage from every point of view for each class of animal production. And this, if it were possible, would be a tremendous help to both breeder and agronomist.

Whatever human taste in diet may be the fact remains that we are always subject to cost. In other words, if we value our beef and mutton, our milk and cheese and all the others, we must see to it that productivity of grassland in terms of food keeps pace with the productivity of land under crops. To this end we must bring the right animals and the right food together. We must manage the grazing or cutting and feeding with the greatest economy and we must control or remove any kind of disease in the animal or in the grass. It is on these subjects that the productivity of grassland eventually depends as a source of food.

It is quite unnecessary for me to emphasize the tremendous importance of food and particularly of protein production in this moment of history. The world population is increasing with such speed that it is going to require desperate efforts to produce enough food, let alone improve the standards, in the foreseeable future. In highly organized countries the problem is largely one of productivity pure and simple and modern machinery is one of the main factors. In less developed countries where capital investment in agriculture generally is bound to be rather slower, the real need is to introduce techniques which can raise the level of production methods quickly. This may mean agrarian reform as well as the latest ideas in agricultural science and technology – both I regret to say, unfortunately, rather indigestible pills for farmers.

In any event there is still ample scope for scientists and technologists in grassland husbandry, whether in temperate or in tropical climates, and the great value of this Congress will be in the stimulus which it will give to this subject all over the world. I would like to congratulate the British Grassland Society and the University of Reading on the way they have organized the Congress and on the interesting programme they have devised. I am also beginning to wonder how they managed to arrange this Congress to coincide with one of the best haymaking years this country has ever seen.

And so, ladies and gentlemen, it only remains for me to wish all Members a very pleasant ten days of discussion and tours and to hope that you will all return home having made new friends, gained new ideas and refreshed your enthusiasm for your job.

Appendix C-9 Ninth Congress - 1965

Ninth International Grassland Congress, São Paulo, Brazil, 1965

Welcoming Address (Rocha, 1966)

Dr. Geraldo Leme da Rocha, Executive Secretary of the Congress

On behalf of the Executive Committee of the IX International Grassland Congress I wish to welcome all present and express our great pleasure in Brazil, having been the first tropical country to hold this world-wide convention.

We are, at this occasion, representing 49 countries congregated around the same objective which unites us into one and only nation. Science satisfies for an instant man's desire to gather together free of boundaries and gives the individual the impression of having reached the unity sought for.

Yes, we are at the present time congress-members from all parts of the world and within us our thoughts are directed to all humanity with its innumerable problems.

Our sole purpose is to rationalize the availability of milk, meat and clothing so that they can be made accessible to all the people of the World.

Our ties originate from a firm foundation, beginning with the grasses in pastures, where we iniciate (original spelling) the study of each leaf bathed in sunlight organizing itself into complex structures. We dig into the earth to observe the roots taking in particles from the soil; we follow the course of the water that carries nutrients and integrates into the sap.

We reach deeply into the genetic patrimony of plants and animals with a view of obtaining better food for an ever-increasing number of people. We regard pastures as a source of raw material and herds as biological entities which transform vegetation into food and wool.

We decompose light and air to become acquainted with their most subtile (original spelling) mysteries; we measure temperatures, winds and rainfall. We climb over mountains and cross valleys and plains; we journey in temperate regions, within the tropics and close to the Poles to enlighten factors which limit production.

In this undertaking we make use of from the microscopes and laboratories to the heavy agricultural implements and tractors. We do the checking of our work on the fields where the variants of the complex soil-plant-animal-environment interact. The pasture problem only admits joint solutions and for this reason it depends on the contribution of all sciences; hence another reason for holding congresses such as this one where a universal staff devoted to grassland research is continuously increasing.

Fellow-members: We are solemnly starting tonight on a work-journey which will bring in results for general satisfaction. Never before has such a numerous and distinguished group of scientists and research workers assembled in the tropics for the study of pastures.

Through means of debates and exchange of experiences we will try to bring about successful results on the assignment given us.

Apart from the discussions foreseen in the program we are certain that the association among participants will provide the opportunity for analyzing details which could not be done during the sessions.

As Brazilians we are honored with the privilege of having you among us. We feel strongly that relationships will be established not only in the field of science; long-living friendships will originate from cultural interest which bind us to this convention.

We ask you to please be benevolent toward any fault of our organization. Welcome to the Congress!

Appendix C-10 X Congress - 1966

X International Grassland Congress, Helsinki, Finland, 1966

Opening Ceremony (Vuorinen, 1966)

Professor Jouko Vuorinen, Chairman of the Organizing Committee

Professor Jouko Vuorinen welcomed the Members of the Congress in the name of Dr. Urho Kekkonen, President of the Republic of Finland, who had kindly agreed to act as Patron of the Congress. Dr. Vuorinen, on behalf of the organizers of the Congress, expressed their great pleasure and gratitude that the arrangements for the Congress had been entrusted to Finland. They regarded this as a great honor.

The Minister of Agriculture, Mr. N. Kaasalainen, after welcoming the members of the Congress, gave a brief outline of Finnish agricultural conditions and said that the country's aim was to achieve self-sufficiency in the supply of basic foodstuffs: this had already been achieved in most products. Grassland research in Finland should, he said, be intensified with the object of increasing yields per hectare, as well as improving the quality and efficiency of utilization. This might result in some over-production of animal products, but at present there seemed to be no alternative to dairy farming if the profitability of Finland's small farming units was to be improved. The Minister concluded by wishing success to the Congress, which he declared open.

Dr. William Davies, replying to the welcome on behalf of the delegates, thanked the Government and people of Finland for inviting the Congress to meet in Helsinki and praised the excellence of the preparations. He went on to speak of the world's 'grassland', which he divided into grasslands of humid climates, sub-arid grasslands, arid grasslands, desert areas. On the subject of humid-climate grasslands, Dr. Davies spoke with admiration of the manner in which Finland had tackled its pasture problems and described how this had been done. He suggested that developing countries should take note of what Finland has achieved from 1930 onwards. Speaking of sub-arid areas, he said that these grasslands had received little or no attention in the tropics until work was recently begun in Queensland. He commended this work to all those who live and work in tropical environments.

With regard to the arid regions of the tropics and subtropics, the term grasslands was, he pointed out, a misnomer for the reason that on them grass species are the least important constituents of the fodders eaten by the grazing animal. He believed that (if there) were modern concepts of pasture research to be applied to the arid regions and sensible experimental studies put into operation, there would be released a new and important source of animal products. As regards the world's deserts, he pointed out that few so-called deserts are completely devoid of vegetation and suggested that pasture science must ultimately be applied to the desert environment, if only to define potentials and to improve the lot of the nomad and his livestock.

Dr. Davies stressed that too many research scientists in too many developing countries were applying themselves to the wrong problems and said that workers in the tropics, and elsewhere, must get their priorities right. The problem facing them was to achieve better nutrition of farm animals so as (to) provide more and better foods for man. Grassland improvement was the key to this process, he said, and should be given top priority.

Appendix C-11 XI Congress - 1970

XI International Grassland Congress, Surfers Paradise, Queensland, Australia, 1970

Australian Research in Pasture Plant Introduction and Breeding, Summary and Introduction (Hutton, 1970)

Dr. E. Mark Hutton, CSIRO Division of Tropical Pastures, St. Lucia, Queensland, Australia; President of the XI Congress

Summary

Australia's emergence as an important world producer of wool, meat, and dairy products would not have been possible without the upgrading of native pastures over extensive areas with introduced legumes and grasses and fertilizer, particularly superphosphate. The widespread adoption of improved pastures in southern Australia is being followed by accelerating pasture sowings in northern Australia now that suitable tropical cultivars and knowledge of their nutrient requirements are available. Of the present cultivars, there are 44 legumes and 23 grasses for temperate conditions and 23 legumes and 40 grasses for the tropics and sub-tropics. Over half the cultivars, both temperate and tropical, have resulted from introduction and improvement work in the last 15 years. Because of the vital and continuing role of legume-based pastures in our animal production, it is likely that numbers of legume cultivars will continue to exceed grass in southern Australia and increase their proportion to grass in northern Australia. In future there will be more concentration on introducing and selecting grasses for their feeding value and response to nitrogen, particularly in northern Australia.

Although it is becoming more difficult to introduce legumes and grasses which fit into the pasture ecosystem better than existing cultivars, introduction and field collection of pasture plants should not be restricted. The challenge is still there to exploit the infinite natural plant variation in overseas countries, particularly in the genera and species which have been found valuable in Australian pastures. If the variants introduced cannot be used directly in pastures, they could be valuable in the breeding of better-adapted pasture plants which give a higher yield of digestible nutrients and animal products per ha. In any case, there are still vast areas, particularly in the Australian tropics, where the variation in soil and climate demand a wide range of ecotypes in existing species and perhaps the use of completely new types such as fodder trees.

Introduction

Australia is singularly deficient in indigenous legumes and grasses that can be used as the basis for improved pastures and increased animal production. Over the last 40 years, increasing areas of improved pastures in Australia have been sown with introduced legumes and grasses. The legumes used respond significantly to superphosphate and most are compatible with associate grasses. Legume-grass combinations fertilized principally with superphosphate and producing nitrogen cheaply for grass and animals have been developed for the main regions amenable to pasture improvement.

Davies and Eyles (1965) calculated that 45 million ha were suitable for pasture improvement in southern Australia (south of 30°S lat.) and 105 million ha in the north. Some 43% of the area in the south has now been developed with sown pastures but only about 2% in northern Australia. A significant proportion of southern development has depended on cultivars of the annuals, subterranean clover (*Trifolium subterraneum*) and ordinary barrel medic (*Medicago truncatula*), which are chance introductions, while in the north much of the current development is based on another chance annual introduction, Townsville Lucerne (*Stylosanthes humilis*).³⁵ Thus, it could be inferred that research on plant introduction and improvement has had a somewhat limited impact on our animal industries. However, most of the Australian pasture species and cultivars have resulted from deliberate introduction and improvement activities and are having an increasingly important influence on animal production.

Introduction of potentially valuable pasture plants was a sporadic activity from 1900 until 1930, when it became organized with the establishment of the Plant Introduction Section of the CSIR Division of Plant Industry (McTaggart, 1942). Many of the introductions have become available through correspondence, but during the last 20 years there have been 21 major plant collections and a number of smaller ones made overseas by Australians. The collections have been more frequent and also more specific in recent years. This reflects an increasing awareness of their potential value to the economy and of the plant types now needed in pastures and for breeding. In the last 15 years there has been an upsurge in breeding work in Australia with both temperate and tropical pasture plants. This is mainly because the characters needed

³⁵ Since these Proceedings were printed the common name for *Stylosanthes humilis* in Australia has been changed from Townsville Lucerne to Townsville stylo.

for adaptation of legumes and grasses to pastures and the grazing animal are better understood.

Appendix C-12 XII Congress - 1974

XII International Grassland Congress, Moscow, USSR, 1974

Address of Welcome (Polyansky, 1974)

Dmitry Stepanovich Polyansky, Minister of Agriculture of the USSR

Dear delegates! Ladies and gentlemen! Comrades!

It is my pleasure to greet you - the delegates and guests of the XII International Grassland Congress in Moscow, the capital of the Soviet state.

Scientists and specialists representing all continents of the Earth have come to attend this Congress.

There can hardly be any doubt that the free exchange of opinion and mutual information on the latest scientific achievements will be of great benefit not only just for those who are attending this important international forum.

The motto of our Congress is contained in the words: "*Soil – plant – animal – products of livestock breeding*." This means that the work of the congress must promote the accomplishment of the noble goal of uniting science and practice, serve the interests of augmenting the productive forces of agriculture, and help to solve the universal human problem of raising the living standards of people in all countries of the world.

Man cannot exist merely at the expense of the natural fertility of soil, cannot take everything from the land and give nothing in return. It is particularly important to bear this in mind now. According to tentative estimates, by the year 2000 the population of the world will be nearly doubled reaching approximately 6000 – 7000 million.

To prove for their needs in everything essential for life, tens of millions of hectares of new lands must be developed annually. Whereas there is actually not very much arable land potentially free for farming, this is why the problem of providing the population with food and clothing is becoming ever more urgent and acute. The population of the developing countries is suffering particularly from malnutrition.

The task of fully meeting the requirements in food and fodder protein is extremely serious. It must be solved primarily by expanding the production of vegetable protein, as well as of protein of animal origin. Microbiological synthesis and the wide use of non-protein nitrous compounds open up truly boundless possibilities for the production of fodder protein, even of food protein.

Can all the lands on Earth provide enough food for its constantly growing population. 'Yes, they can!' reply progressive scientists with confidence. The experience of the developed European countries has shown that irrigation and drainage of land, the liming of acidic soils, optimum doses of fertilizers, new varieties of plants and a high level of land cultivation make it possible to develop farm production at unprecedented high rates, considerably overtaking the rates of population growth.

It may be presumed that this Grassland Congress will contribute with all its weighty prestige to the solution of all problems connected with raising the level of land cultivation, and the growth of agricultural production. Its recommendations will undoubtedly serve to promote the expansion of friendly ties and cooperation among meadow cultivators of all countries, as well as the development of mutual understanding among all nations in the interests of strengthening peace on Earth.

You are engaged in problems of grasslands cultivation and we organically link our activities with the cause of peace. This is no mere chance. The guarantee for peace constitutes the most vital and urgent task of all humanity. The problem of boosting the production of all types of products necessary for the development of human society can only be resolved in conditions of peace.

If we say that workers in agriculture are representatives of a peaceful profession, it then follows that the most peaceful people on Earth are cultivators of grasslands.

Hence, your activity and your voice – the voice of scientists and specialists, representatives of a peaceful science, of a peaceful profession, can and must have weighty significance in the struggle of progressive mankind for peace and friendship among the nations of all the world.

The successes in the fight for peace are successes scored by people of peaceful physical and mental labour, of all those, whose minds and hands channel the development of society along the road of scientific and technological progress, in the interests of improving the living standards of the people.

In a comparatively short period, scientists in the Soviet Union attained major successes in all directions of scientific activity. In a speech delivered in Kiev in 1973, Leonid Ilyich Brezhnev, General Secretary of the Central Committee of our Communist Party, stated that today science has actually become a direct productive force, moreover, such a force, the importance of which is growing day by day.

Visible testimony to this are the successes achieved in recent times in the development of agriculture, of all the branches of this top-priority production sphere.

The chemicalization, mechanization and land reclamation, the specialization and concentration of production form the core of agriculture development in the USSR. With every year collective and state farms are receiving the latest farm machines and modern equipment.

The recently created selection centres in our country are expanding their activities in breeding new varieties of cultures of intensive growth. The influence of these centres spreads over all the territory of the country; however, we must frankly admit, that although major successes have been scored in the selection of grain cultures, the results of selection in the production of fodder are very modest.

The task of selectionists, and not only of Soviet selectionists, but of many others, lies in creating high-quality varieties of fodder crops, responding well to irrigation and fertilizers, capable of rapid regrowing at intensive use, possessing a high resistance to frost and drought, as well as other properties. This is a particularly pressing task nowadays in conditions of the increasing specialization and concentration of farm production, first and foremost, of such a branch as livestock-breeding.

A stable fodder base is essential for the successful development of livestock-breeding. This task is of equal importance to all countries. The further increase of grain production creates the foundation of the fodder base. Grain is necessary not only for providing people with bread. It is also essential in the production of meat and milk, eggs and other products of livestock-breeding.

This is why the increased crop capacity of grain cultures, the growth of the gross yields of grain acquire tremendous significance today. At the same time, it is necessary to increase the output of other cultures too for meeting the requirements of farm animals in fodders. Work is currently being carried out on a large scale to improve natural grasslands, hay-lands, pastures, to create irrigated pastures and increase the crop capacity of all fodder cultures. The solution of this task is of exclusive importance not only for the Soviet Union.

Speaking on the problem of fodder productions, it must be taken into account that there are many scientific problems and a number of questions which must be solved by the joint efforts of scientists in different countries.

We must give thought to the problem, before all else, that the use of chemicals should not prove detrimental to environmental conditions. It is the duty of scientists to carry out complex investigations to ensure that various chemicals used on fodder-growing areas would not be harmful to the soil and our natural environment.

Land is immense irreplaceable wealth, of top-priority importance for all social production and for human life. It does not belong to us only, but to our children and

grandchildren. We are obliged to improve the land with every year, increasing its fertility.

Along with the concern for the land, we must show as much loving care for the forests and rivers we use, for all our environment. It is our duty to care for the land and the nature surrounding us so that future generations can be proud of us and will remember us with gratitude.

The establishment of efficient scientific exchange among different countries is important for the fruitful solution of these problems. In our times such an exchange is acquiring particular significance. We are for the expansion of scientific ties with all countries of the world and are sure that this wish and endeavor will be backed by all the delegates to the Congress.

It is common knowledge that the foundation of such cooperation among scientists and specialists in grassland cultivation was laid by the I Grassland Congress held in Leipzig in 1927. I would like to express confidence that this XII International Congress will discuss all the achievements of science and practice in grassland cultivation in modern conditions and make a big new contribution to the expansion of scientific ties among scientists and specialists of different countries, to the cause of the further development of agriculture, of improving the welfare of peoples.

With this I declare the XII International Grassland Congress open!

Appendix C-13 XIII Congress - 1977

XIII International Grassland Congress, Leipzig, German Democratic Republic, 1977

Foreword (Lemke, 1977)

Reinhard Lemke, Vice Minister of Agriculture, Forestry and Food of the German Democratic Republic; President of the XIII International Grassland Congress

The International Grassland Congress is one of the most important events in agricultural sciences. It has been held in intervals for 50 years, and ever since the First Congress held under the heading of *First Convention of Pasture and Meadow Farmers of North and Central European Countries* (I. Versammlung der Weide- und Wiesenwirte aus den nord- und mitteleuropäischen Ländern) in Leipzig, 1927, it has grown to a world-wide platform for international exchange of views and experience in the field of forage production.

The XIII International Grassland Congress took place as a Jubilee Congress again in Leipzig, in the 50th year after its first inauguration, on an invitation extended by the Government of the German Democratic Republic and in response to a resolution passed at the XII International Grassland Congress in Moscow, 1974. The Organizing Committee of the GDR has undertaken greatest efforts, with the view to making optimum arrangements for the Jubilee Congress and to demonstrating the progress achieved in the agricultural sector and consequently, in the context of grassland management and forage production of the German Democratic Republic owing to socialist transformation of agriculture under the guidance of the working class and its party, the Socialist Unity Party of Germany, and as a result of creative application of LENIN's Cooperative Plan.

Participants from various countries said at the Closing Session that the XIII International Grassland Congress had been a highlight in International Grassland Congress history.

A debt of gratitude is extended once again to those comrades and friends in the USSR who, unselfishly, made available to the organizers their own good experience in preparing and holding the XII International Grassland Congress in Moscow, 1974.

The organizers have tried to prepare a complex programme. The participants in the Congress were given facilities to present lectures or get involved in discussions, with

the view to making their own contributions to that international exchange of scientific experience and, consequently, to adding to the treasure trove of knowledge relevant to an intensification of forage production as a point of departure to growing livestock production. Organized visits of cooperative farms, State farms, and cooperative services provided good opportunity for all to obtain first-hand information on the results so far produced by high-continuity socialist agricultural policies as pursued by the German Democratic Republic and, in particular, on what has been achieved in intensifying forage production by transition to industrialized methods on the basis of cooperation.

The German Democratic Republic has tried to be a good host to the participants in the XIII International Grassland Congress. May all the knowledge and experience pooled at the Congress yield benefit to circles far beyond the delegates. May their widest possible dissemination and application help enhance forage production world-wide, as a basis for more high-quality food of animal origin. May all these efforts turn out as a major contribution to fighting hunger in this world.

Opening Remarks: (Pandeya, 1977)

S. C. Pandeya, Chairman of the Continuing Committee of the International Grassland Congress at its XIII Session

Your Excellency, Mr. KUHRIG, Minister of Agriculture, Forestry and Food of the GDR,

Honourable Mr. LEMKE, President of the XIII Session of the International Grassland Congress,

Prof. Dr. RÜBENSAM, President of the Academy of Agricultural Sciences of the GDR, Dr. F. GRIMM, Acting Mayor of the city of Leipzig,

Fellow delegates,

Ladies and gentlemen,

It gives me immense pleasure to welcome you all at this XIII Session of the International Congress, which is truly the Golden Jubilee session. The present session is all the more important and memorable for 3 reasons, viz.

(a) It was here at Leipzig, in the year 1927, that the International Grassland Congress was founded and its very first session held to promote the International exchange of scientific experience in the field of grassland management, and thus, by ways and means, the intensification of forage production to contribute to an everbetter nutrition of the growing world population.

- (b) Although all the past sessions of the Grassland Congress have been highly successful, but then it is again here at Leipzig that the first Constitution of the International Grassland Congress, as a body, is going to be assepted (word used in publication), so that all future Congresses will have sound footing for their organization.
- (c) This session has one more novelty, and that is, this session is going to discuss ecological problems of grasslands from all regions of the world with climates varying from extremely hot deserts to tropical rangelands to temperate regions and tundras; thereby, to understand the dynamic biological basis of the growth and yield of herbage, and thus to find more coherent methods for the intensification of fodder production.

Ladies and gentlemen, I have, therefore, great pleasure in welcoming you all the delegates to this XIII Session of the International Grassland Congress. This session is a very nicely represented one. We have about 1000 delegates from some 40 countries of the world. I will like to convey our heartfelt thanks to all the participating countries for sending their delegations.

On the academic side, I like to inform that there are going to be in all 10 Sections:

Biological fundamentals of yield formation with grasses and legumes;

Ecological problems of grassland management under different climates and problems of environment;

Establishment and efficient use of pastures in tundra regions and alpine locations;

Improvement and efficient use of grassland in arid regions of the world;

Intensive use of humid and semi-humid grassland as pastures and meadows;

Fertilization and water-regime regulation on grassland;

Plant diseases, harmful plants and their control on grassland;

Biological fundamentals and technology of forage conservation;

And lastly, the Section on Forage quality and evaluation.

I am sure, your fellow delegates will put maximum efforts to present and discuss all the issues very carefully so that some solid conclusions and recommendations will come out to be delivered to grassland managers, world over. While you are actively busy in your sessions, I will also request fellow delegates to think out ways and means to disseminate your rich knowledge and experience to the developing countries of the world. For the purpose of a good liaison, it is also essential to understand the unique regional and climatic problems present in developing countries. We have to realize that environment is not just the climate, but it is the totality of the entire or holocoenatic system of nature which functions as the whole. In that, we have physical environment, like climatic and soil attributes; the biological environment, constituting plants, animals that feed on them, and man as the supreme consumer; and lastly, we have socio-cultural environment, having socio-cultural and socioeconomic patterns, the education, and the political makeup. One has to view the development of the grasslands under the integration of all the 3 sub-environments and to find newer techniques of intensification keeping in view that there should be minimum boomerang of our activities on the grassland systems.

Last, but not the least, I like to add few words regarding the organization of this Congress.

I am certainly thankful first to my Continuing Committee for the honour they have done me by electing me the Chairman and the confidence they have reposed in me. Although not an easy task, it was made so due to the excellent foresightedness, superb cooperation and organizational technology of our worthy President Mr. R. LEMKE and his Organizing Committee, who have very minutely planned all details of the Congress, and I am sure the Congress, so well planned, is going to be a very big success; and I heartily thank the German Democratic Republic for all the excellent arrangements and warm hospitality. However, if you find any lacuna (deficiency), the discredit should be directed to me.

Ladies and gentlemen, once again I wholeheartedly welcome you to the Congress and wish all success to the deliberations.

Appendix C-14 XIV Congress – 1981

XIV International Grassland Congress, Lexington, Kentucky, USA, 1981

Presidential Address: Grassland Agriculture – Serving Mankind (Barnes, 1983)

Dr. Robert F Barnes, Associate Regional Administrator, USDA-SEA-AR, Southern Region, New Orleans, Louisiana, USA; President of the XIV Congress

I sincerely thank our previous speakers for their expressions of welcome and their statements concerning grassland agriculture and its significant role in serving mankind. Grassland agriculture may be described as the art and science of cultivating forage crops, pasture and rangeland for food and fiber production. Grassland systems are dependent upon grasses, legumes, and some woody sources of forage, as well as upon managers for proper land use and increased animal profitability.

It is important to understand the terminology associated with grassland. Efforts have been made in the past to document it, and I commend those efforts, for I feel that there is a continuing need for clarifying terms and their use. Although there may be some discrepancies, I urge that we orient our thinking toward the following definitions: Grasslands: Moore (1970) used the term to denote all plant communities, on which animals are fed, annually sown crops excepted.

Forages: Henzell (1983) uses the term broadly to apply to all plant materials eaten by herbivores, including those that are grazed (pastures) and those that are cut before being fed (hay and fodder). Crop residues such as straw and the foliage of trees and shrubs also fall within this broad definition.

Pastures: Primarily refers to plant communities predominantly of introduced species, whether sown or volunteer, on which animals are grazed (Moore, 1970). A more restrictive definition is "fenced area of domesticated forages, usually improved, on which animals are grazed."

Rangeland: This is a term of American origin. It means land on which the native vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing use; land not dominated by trees.

Range: This term is difficult to define precisely since it has evolved into a collective word with broad definitions, such as "the region throughout which a plant or animal naturally lives." Range, in this context, encompasses all rangeland and forest range,

that is, those forest lands that support an understory of herbaceous or shrubby vegetation providing native forage for grazing and browsing animals.

Thus, grassland agriculture, in the broad sense, constitutes the largest land-use practice in the world, covering more than half the total land surface of the earth. Grasslands also remain one of the largest undeveloped resources for increased agriculture productivity in the world today.

The basic natural resources associated with the production of forages include land, climate, water, and energy. Sound husbandry of these natural resources will be required if increased grassland productivity is to be attained while maintaining a quality environment. As Dr. Gerald Thomas (Thomas, 1983) will emphasize in his plenary paper, increasing population, changing attitudes of people, and increased levels of affluence are having a decided influence upon the development and use of the earth's resources.

During this Congress, many speakers will identify a multitude of problems concerning the development, production, and use of the grassland resources of the world. Among the major constraints facing the world today are:

- 1. Shortage of fossil fuel energy.
- 2. Scarcity of water and deteriorating water quality.
- 3. Soil losses.
- 4. Insufficient knowledge and technology reserve.
- 5. Failure to apply existing technology.
- 6. Increasing competitive uses for resources.

I suggest that we look upon these constraints not as problems but rather as opportunities. I trust that each of you will strive to define these opportunities clearly and to establish the research, extension, and educational programs needed to effect major improvements in our grassland resources. Increasing pressures for goods and services to meet the needs of society require that these resources be given full attention. Our grasslands must be improved and maintained in an ecologically and economically sound manner in order to meet national and international needs for food, fiber, environmental quality, wildlife, and outdoor recreation.

An array of scientific disciplines is required to tap the tremendous potential that exists for increasing agricultural productivity through judicious use of grassland resources. Moreover, a sound national grassland philosophy is required by any nation before an efficient grassland agricultural program can be developed. We all have an opportunity and a responsibility, whether we are scientists, technicians, administrators, farmers, ranchers, or consumers, to influence our nation's grassland philosophy and, in turn, the establishment of a sound agricultural policy that allows the effective development and use of those grassland resources. The importance of establishing strong local and national grassland organizations as a means of providing leadership for such efforts cannot be overemphasized. I have experienced the importance and impact that the American Forage and Grassland Council and the Society for Range Management have had in the USA. Representatives from many such forage, grassland, and rangeland organizations from throughout the world are present here today. Many of you have seen the effects of your organizations in your own countries. We salute you and commend your efforts.

I would now like to address briefly an issue that developed at the Final Business Meeting of the XI International Grassland Congress, held in Australia in 1970. It was noted that the arid and semiarid areas of the world's land masses were "receiving increasing pressure to produce forage for livestock and wildlife, water for downstream needs, and services for Man's enjoyment. Research efforts into problems of arid and semiarid lands are rapidly increasing, and a worldwide need exists to communicate the results of this research and a practical management." It was recommended that "future Grassland Congresses contain contributed papers, discussions, and plenary sessions concerning this important area of the world's grasslands."

Parenthetically, I would like to note that a conscientious effort has been made to develop a program for the XIV Congress that will encompass the needs of the full continuum of the arid, semiarid, subhumid, and humid areas of the world, as well as of the temperate, subtropical, and tropical regions. It remains for you to determine and for history to document whether this goal is achieved. In 1978 the First International Rangeland Congress was convened in Denver, Colorado, USA, due, at least in part, to the failure of the International Grassland Congress to encompass the full complexity and diversity of the grassland agricultural systems, particularly arid and semiarid rangelands.

A Committee for the continuation of the International Rangeland Congress (IRC) has been actively involved in identifying a host for the Second, IRC. A report concerning the status of these activities will be made during the business meeting of this XIV Congress.

I personally support the concept of two congresses, provided their programs are complementary and their meetings are held in alternating years. Also, it is highly desirable that a close liaison be maintained between the two Continuing Committees. I will be serving on both committees for the next three to four years and thus hope to be able to aid in that continuity. However, I strongly recommend that the two committees specifically provide for a formal liaison on a continuing basis. I would also like to speak to the questions of the founding of an international grassland organization. A resolution was passed by the XII International Grassland Congress, which met in Moscow, USSR, in 1974, recommending that the Continuing Committee study the question of the advisability of founding an international grassland organization and to report the results to the XIII International Grassland Congress. At that Congress, in Leipzig, GDR, in 1977, the Resolution was addressed superficially at the final business meeting, and it was concluded that there were many considerations and aspects which were not in favor of setting up such an organization for the time being. The Continuing Committee, however, recommended that grassland organizations should be established at national levels.

I personally have a dream that I would like to share with you. I envision the establishment of a coordinating body for the Grassland Congress and the Rangeland Congress. Perhaps it might best be called the International Grazing Lands Organization or the International Forage Pasture and Range Organization.

I recognize the complexities, difficulties, and obstacles to be overcome in the establishment of such an organization. My wish and my prayer are that there are enough like-minded individuals gathered here today who may cause it to happen. It may not come to pass for another decade – but if it is to succeed, it must be started at the earliest possible date. I look forward to hearing your reaction to such a proposal. For it is only as we work together for good, that we can truly serve mankind.

I am confident that the interchange of experience and knowledge of those attending this Congress will result in tremendous benefits to this and future generations. I thank you for your attention and now declare the XIV International Grassland Congress duly open for business.

Appendix C-15 XV Congress – 1985

XV International Grassland Congress, Kyoto, Japan, 1985

Grassland Science for the Betterment of All Mankind (Nikki, 1985)

Dr. Iwao Nikki, Minami-Kyushu University, Miyazaki, Japan; President, XV International Grassland Congress

Distinguished guests, ladies and gentlemen:

As the President of XV International Grassland Congress, it is my great honor and privilege to extend a cordial welcome to all our participants, and especially to those delegates who have come from other parts of the world.

It is said that the total acreage of world grassland amounts to two-thirds of the total agricultural land area of the earth. Its total potential dry mater yield per annum is estimated at about 40 billion tons, but its actual yield is less than one-third of that. These figures indicate a promising future for grassland science.

Recently there have been some new developments in world grassland farming. First, grassland farming is newly developing in Asia. Its appearance is different from that of other areas. But if you look into this carefully, you will find many serious problems in common with other areas, problems which require international cooperation and interdisciplinary study.

Second, from a long-term global point of view, the shortage of food is surely one of our most serious problems, and there is little possibility of increased grain production through the reclaiming of new lands.

At the same time, nearly 500 million tons of grain, equivalent to about 40% of the total annual grain production in the world, is consumed as animal feed. This fact indicates the enormous potential of increasing the food supply by replacing feed grains with increased grass. Grassland science may become an important key to solving world food problems.

Third, desertification of arid regions has recently become increasingly serious. Some of those lands had been used for grazing for thousands of years without any trouble. The conditions which brought about such desertification can be summarized as follows: (1) People's lack of understanding of the ecology of grazing lands, and (2)

Insufficiency of governmental grazing lands guidance and policies. Desertification might be considered one of the most serious problems that grassland scientists are facing today.

Twentieth century scientific progress and technological developments have been remarkable, stimulating a similarly remarkable development of resource-wasting industries that support a highly affluent way of life. But the world food problem is still left unsolved. In addition, such newly urgent problems as overpopulation, air pollution, water pollution and environmental destruction threaten the very foundation of human existence.

In order for mankind to survive very far into the future, we must develop a new science and technology based on a new value system. It may be said that grassland science, which is deeply connected to food production, land utilization, and environmental conservation, is charged with the heavy responsibility of being a science for human existence. This idea was the basis for choosing the main theme of XV International Grassland Congress, that is to say *Advances in Grassland Science for Betterment of All Mankind*.

As this is the first time in the 58-year history of the International Grassland Congress that the conference is being held in Asia, our Organizing Committee has tried to have as many participants as possible from other countries, especially for Asian countries. We organized an Asia Subcommittee under the Organizing Committee, to gather as much information as possible about Asian grassland science research activities and researchers, to whom we forwarded Congress brochures. We sent a special mission to the Republic of Korea in 1982, and to the People's Republic of China in 1983 to seek cooperation for XV International Grassland Congress. We are deeply grateful to the Asian countries this year for sending many participants and for volunteering 273 papers, 47% of the total number.

Those Asian papers tell us the following about grassland and forage crops in the region: (1) there is a conspicuously increasing demand for animal protein as food; (2) the development of forage crops and grassland is an urgent problem; (3) there are many constraints, such as harsh climatic and adverse soil conditions, rough topography, limited land resources, too small a farm scale, etc., but nevertheless research work in Asian countries has been conducted with fruitful results. You may expect a refreshing atmosphere and stimulating discussions at this Congress, and perhaps you will leave feeling all the more keenly the importance of international cooperation in research and information exchange.

In the development of the world grassland farming just described, international cooperation will become far more important than before. The International Grassland Congress has played a key role since its inception. In addition, however, the future

will require various types of cooperation, such as the interchange of seed and plants, materials, experts and so on, among certain countries. And the education of researchers and teachers will be one of the most important objects of international cooperation.

In relation to the grassland problems of arid and semi-arid areas and of desertification, official liaison between the International Rangeland Congress and the International Grassland Congress is essential, as was stated by Dr. Barnes in his Presidential Address at XIV International Grassland Congress in Kentucky. I would like to recommend that the Continuing Committee of the International Grassland Congress consider the most appropriate manner of pursuing such a liaison.

As I mentioned earlier, in order to solve world food and environmental problems, which are becoming increasingly critical, the worldwide promotion of grassland farming is indispensable. On this occasion with grassland scientists from all over the world gathered here, I would like to make an appeal for such promotion to each nation in the world, to each government and international organizations concerned.

In order to bring about a successful Congress, mutual understanding is the most important factor, and needless to say, in this our main language, English, will play a decisive role. However, for those who are not native English speakers, the English language may be nothing but a handicap. In order to alleviate this shortcoming, I would like to make the following suggestions: native speakers should try to speak English slowly and distinctly with pauses to enable the company to understand the statement, not only at presentations but at all times such as at coffee breaks and so forth. Those speakers who are presenting papers in Japanese should try as well to speak Japanese slowly and distinctly with pauses, so that the English of the simultaneous interpretation might be more easily followed. And, as Congress President, I would like to request that all the presiders and discussion leaders of the Plenary Sessions and the Technical Sessions lead each session in accordance with this language policy. Non-native speakers should try actively to speak English without fear or hesitancy.

I would like to speak a few words particularly to the international guests about grassland farming in Japan. It has something in common to various aspects with that in other Asian countries, while on the other hand having some things peculiar to Japan. It plays a fairly important role in Japanese agriculture and it must be further developed in the future. I would like to ask the international guests to try to gain an understanding of the realities of Japanese grassland through the Plenary Sessions, Technical Sessions, Farmers' Forum or Congress tours, and to give us your comments.

Grassland farming in Japan may be described briefly as "a highly intensive system of cultivation and feeding with heavy fertilization aiming at high level of production."

The historical conditions resulting in such an intensive way of farming might be briefly summarized as follows: First, an intensive system of forage production is possible, as well as necessary, as with other crops such as rice, due to the favorable climate and the small scale of each holding. Second, the importation of a huge tonnage of feed grains has become more general and has been increasing year by year. Japanese self-sufficiency in grain has decreased from 82% to 33% during the past 20 years. Such importation of grain may be considered a serious problem not only from the viewpoint of world food supply but also from a domestic viewpoint. Third, with the drastic industrial development in Japan, the farm population has decreased to one-third its former strength during the past 25 years. As it is not considered desirable to absorb still more farm people into industry through the encouragement of further industrialization, we must try to assure a stable way of living for the remaining 4 million farm holders. Grassland farming, dairy farming in particular, is considered to be one of the most promising approaches.

Finally, I hope XV International Grassland Congress will be fruitful for you and that all our international guests will fully enjoy Kyoto and Japan.

Appendix C-16 XVI Congress - 1989

XVI International Grassland Congress, Nice, France, 1989

Final Address (Picard, 1989)

Dr. J. Picard, Institut National de la Recherche Agronomique (INRA) – Dijon; President of the XVI International Grassland Congress

This Congress has ranged over the whole planet and delegates from 78 countries have taken part. We particularly welcomed the large representation from China as well as the delegates from numerous African countries. The papers have drawn attention to the extraordinary diversity of pastures and to the wide range of methods of utilization. In attempting to summarize this diversity I have divided the world into a few large zones.

The Arid Crescent of the Ancient World, from Mongolia to Mauritania (and adding Southern Africa)

Here traditional pastoralism, including nomadism, semi-nomadism or transhumance, according to the situation, appears to provide an ecologically well appropriate method of utilization. But the general situation has become critical and, for example, the agricultural retrenchment in Mediterranean Europe poses problems to the European Economic Community.

In other regions, overstocking, increased efforts to produce cereals, cutting of trees for firewood, all aggravated by increasing population pressure, are leading to extension of the desert areas.

Technicians and scientists must propose solutions. These will require the definition and application of long-term policies whose implementation may encounter many obstacles.

Temperate Europe

The intensification of production has resulted in food surplus in Europe. This intensification may be attributed to improved winter nutrition of livestock, a

consequence of improved forage conservation, the expansion of maize growing, the use of concentrated feeds, the liberal use of fertilizers, and mechanization. These subjects and problems of surplus were highlighted at the Farmers' Forum. Increased productivity per man and increased farm size is still to be pursued and less intensive methods adopted wherever they are profitable (for example in farming new species such as deer). Moreover, the abandonment of small farms or limited areas which cannot be viable economically, could have adverse effects on the environment and on tourist potential.

The Over-Populated Tropical Areas of the Ancient World (South and South-East Asia)

Here grasslands play only a small part and their importance is likely to dwindle further as populations increase. And yet the need, especially for milk, is considerable. Is it possible that more cows could be maintained in conditions where fresh or preserved feeds even hand made from forage gardens, forage shrubs, and byproducts provide their diet? If this was associated with market gardening, fertilized by the cow manure, these cows could make a substantial contribution to human nutrition.

The New World

In North America and Oceania, the population density is very low, and large areas are used only extensively. These can be used more intensively or allowed to regress, according to requirements, and in consequence, these regions have much more freedom of action than elsewhere.

In Latin America the situation is characterized by extensive ranching on large areas while the great majority of small farmers are striving to intensify their production, especially of milk.

After that necessarily brief and incomplete survey, may I refer, again briefly, to some of the new techniques available to producers and scientists, since our increased knowledge has led to the development of new practices in many fields.

In my own field, plant breeding, we now have available all the biotechnologies referred to by Yves Demarly in his paper. But it is a matter for regret that we did not

receive participations from vigorous International groups tackling, for example, such problems as protein quality, saponins and lignin content in lucerne.

Some techniques, such as embryo and ovule culture, have already been adopted as routine in the selection of forage plants. However, developing countries cannot benefit from genetic progress for lack of organized production and distribution of seeds. It is regrettable that, for example, the products of the International Centres cannot be more widely distributed. Efforts have still to be intensified on these points.

Similar progress is available in other areas, for example in the application of near infra-red spectrometry to assess the nutritive value of forages.

All this emphasizes that existing knowledge is ready for wider application in several sectors. The problem of integrating various aspects of new knowledge into practical programmes has been a brake on progress for a long time. It is to be hoped that the new techniques of modeling and systems synthesis will help to overcome these difficulties.

Now may I pose a problem although I do not pretend to have the answer? Why have so many ambitious programmes in developing countries failed to fulfill their promise? Has the available knowledge been adapted appropriately, or have complex methods, applicable only in industrialized countries been imposed, when the gradual improvement of local practices might have been more successful?

To finish, two questions:

One to the developing countries. Many of their political frontiers are quite artificial in relation to the natural geographical and climatic zones. Would their research be more effective if it was coordinated for geographical rather than political regions?

The other, to the industrialized countries which often provide the training in grassland science for research workers and technicians from the developing countries. Can we devise the means to avoid the wastage which sometimes arises from competition between the industrialized countries?

And to conclude:

This Congress has confirmed the vital importance to the World of the grasslands and of herbivorous animals, in sustaining the viability of agricultural systems, in maintaining soil fertility and as valuable means of agricultural development in less favoured areas.

Let us hope that we can act in such a way that our descendants will still have sustainable agricultural systems at their disposal in the future.

Appendix C-17 XVII Congress - 1993

XVII International Grassland Congress, Palmerston North, New Zealand, and Rockhampton, Australia, 1993

Presidential Address (Brougham, 1993a)

Dr. Ray W. Brougham, International Consultant on Grassland Research, Palmerston North, New Zealand; President, XVII International Grassland Congress

Welcome to you all. You come from all parts of the World, from about 100 countries in fact. And the native tongue of many of you is not English. We hope you will bear with us and accept English as the language of the Congress.

About six years ago, almost to the day, three of our Organizing Committee travelled from Palmerston North to Hamilton, New Zealand, to attend the Asian-Australasian Animal Production Congress. During the trip we discussed a letter received from Bob Clements, Chief, Division of Tropical Crops and Pastures, Brisbane, Australia, that urged New Zealand to prepare an invitation to hold the 1993 International Grassland Congress in New Zealand. The last Congress held in New Zealand was in 1956. The outcome was a decision to issue an invitation to the Continuing Committee of IGC. This was duly done and submitted and in due course an affirmative decision confirmed by the Continuing Committee was relayed to us by its chairman. This was duly ratified at the XVI Congress in Nice in 1989.

Very early on in the formulation of the structure of this Congress we made some key decisions. We decided to:

- 1. Share the Congress with our Queensland enthusiasts (or those we coerced). This was done to ensure that at one Congress we could embrace most of the climatically different regions of the world ranging from tropical-subtropical to temperate-cold temperate.
- 2. Because of this it was necessary to embrace different venues for parts of the congress. Some of us also had a strong desire that delegates be given the opportunity to see at first hand the grassland agriculture of the different regions. Hence the four-venue format of this Congress and the emphasis on seeing as well as talking and listening.
- 3. This also meant we would be best served by going to some of the smaller rural population centres: preferably those with universities having a

grassland- agricultural appreciation. We succeeded in this, but the decision meant that to cope with numbers we have been forced into some interesting strategies and meeting venues.

- 4. Another important decision was to make this a Congress where all delegates have the opportunity to participate actively. To achieve this, we have adopted the poster approach for submitted papers following invited papers in each Session. In each Session we have set aside a very liberal allowance of time for structured discussion. This format will quickly unfold during the course of the Congress and we hope that you will quickly grasp the opportunity to participate with brief yet pertinent contributions. Our end objective is to assess where we are at and to obtain sets of recommendations for progress in each session topic and, importantly how to achieve these for different grassland regions of the world.
- 5. Our fifth objective was to set up a Congress where Third World delegates took up prominent positions as invited speakers or participated fully as delegates. A large proportion of the world's grasslands are in developing countries and there is an urgent need to provide the managers of these resources with information and technology for management systems and farming and cultural practices that will lead to better productivity and sustainability. We have managed to attract more than 400 delegates from developing countries, about 30 playing key roles as main session speakers. Many of these have been partially or fully supported financially by (this) Congress.
- 6. Our final objective was to attract a healthy representation of delegates from as many countries as was possible. Being situated geographically "at the bottom of the world" so to speak, we knew that travel to New Zealand and Australia would be expensive. This meant the need not only for large sums of monies for fellowships for some of the speakers and developing country participants, but also a need to keep the registration and Congress fees as low as possible within the constraints of economic viability. I believe we achieved this. Out of a total Congress budget of approximately 1.8 million NZ\$ (approximately 1 million US\$) more than \$1.3 million NZ\$ was raised through sponsorship. This came mostly from corporate sectors and private trusts in New Zealand and Australia and from international aid agencies. On your behalf I publicly thank these groups for their generous and spontaneous sponsorship. What this means to each of you attending is an average reduction in your participation costs of about 1200 NZ\$.
Why are We Here?

As we see it, and you will appreciate that each of us on the management committee have debated this question to ourselves and collectively many times this past six years, we are here to review the grassland regions and resources of the world and to review progress made in their development and improvement, their management and productivity, their utilization, their degradation where this is occurring and their sustainability. We are also here to ensure that mechanisms of technology transfer and in particular information on wise use and practices associated with productivity increases are transferred to the practitioners, the farmers, the pastoralists, the managers, the policy makers and the governments that are responsible for the world's grassland resources. If we are to do this with any meaning and impact at all we will also need to pay particular attention to the dramatic increases occurring in the world's population, especially in certain regions. This could be singularly the most important factor currently creating the most intense pressure on the world's grasslands. Economic motivations may be equally as damaging, especially those practiced by bodies profit motivated but ignorant of the ramifications of grassland abuse and mismanagement. Such practices associated with world trade imbalances frequently place disproportionate pressures on the grassland's resources of the developing world. It is essential therefore that these impacts form part of our agenda and are adequately covered in developing our recommendations and conclusions.

Our programmes at the different venues have been designed to cover these and related topics and issues. Parts of the programme follow the patterns of previous congresses in that edaphic, biotic and climatic factors as these effect plant, pasture and grassland growth, animal production and farming practices in the different regions of the world will be considered. Other parts of the programme are relatively novel. These sections include the impact of factors such as climate change and advances in molecular biology on grasslands productivity. We are keen to learn what impact studies and research in these areas will have on our grasslands. There are those that would argue that these sciences have yet to have a significant impact on improvement to our grasslands through gene manipulation or from modelling climate change impacts and accounting for them through improved cultural practices. Others are much more optimistic and point to studies and developments such as gene manipulation for enhanced protein utilisation or fibre degradation. The impact of the practical application of these could be tremendous, especially on high fibre-low protein tropical pasture species and the grasslands that they form. A similar situation will apply to the practical application of gene transfer systems in legumes that are in place or are close to understanding. These developments will have a large impact on conventional plant selection and breeding. We need to place these sciences in perspective in our deliberations and assess their possible contributions to our studies and assessments of the many and variable grassland models that will be debated during this Congress.

Considerable emphasis has also been placed in our programme on biodiversity. The opportunities for more diverse farming operations throughout the grassland world are large, as are the opportunities for embracing endangered species in biologically diverse operation. We can learn from the developing world in these terms. An example is the harmony and balance that seems to exist between wildlife and domestic animals in the Masai tribal lands of eastern Africa.

Deforestation has also been included in the programme. This topic frequently provokes heated discussion and sometimes illogical argument, especially when considering deforestation in developing countries such as the Amazon basin of Brazil, or the Himalayas or China, or in fact in Queensland, Australia. Much of this debate originates from countries in which the forest resources have already been utilised and profited from. We need to debate the issues around deforestation and place them in perspective. Of prime importance is to debate them outside the influence of corporate greed or idealistic fervor. Can these resources be utilized and converted into grassland areas without impacting dramatically or even moderately on either local or worldwide environmental and climatic patters. Importantly if they cannot what compensation can countries with these resources expect and receive from the more developed and affluent world.

The world's grassland recourses are finite. Importantly, the next 10-20 years could be critical in ensuring their sustainability and developing improvement strategies to achieve orderly increased productivity to meet the food demands of the world's ever increasing population. And this does not apply solely to areas such as sub-Saharan Africa. Similar scenarios apply to the nomadic regions of the Khazak people and of China and Russia or to the transhumance regions of the Himalayas and many others. Inland Australia (the dry, dry regions), parts of southern and eastern Africa, various regions of greater Asia and parts of North and Central America are further examples. The shadow of over-population associated with over grazing as the trigger to degradation is frequently blamed. But in many regions it is not the sole cause; there are others such as profit motivations and ignorance of impacts. Yet the trends can be reversed, as has been demonstrated by the USDA in some of the previous dust-bowl regions of the USA through application of government-sponsored grazing strategies.

Given these developments and trends in many regions of the world then the move towards reduced R & D inputs in grassland and related sciences in many countries associated with reductions in technology transfer efforts are short-sighted and dangerous. They will certainly not foster sustained long-term approaches to sciencebased management that are needed to fully understand and maintain the world's grassland resource in a viable and productive state, especially in grassland-rich countries. I would also like to think that the more affluent countries in the world will one day recognise more fully their responsibilities to the developing world. And how better than in the fields of grassland science and food production.

Perhaps your greatest challenge at this Congress therefore is to re-establish all those involved in the custody of the world's grasslands as caring, innovative, and essential people with important and vital contributions to make for the world's good.

Finally, we've provided the forum, we've set the agenda, we've encouraged you the participants (senators) to attend. We will encourage you to debate and ensure its orderly progress. And we will print the record of these debates for future use. It's now up to you, the speakers and delegates, to debate the issues and provide the world with your recommendations and conclusions. Make them good and meaningful because perhaps the world has not got much time left to ensure the sustainability of its grasslands.

I wish you all a rewarding Congress both scientifically and socially. And, when it's all over, a safe and pleasant journey home.

Dr. David G. Crespo, Crop and Grassland Service, FAO, Rome, Italy; Chair, Continuing Committee (Crespo, 1993)

This is the first time that the Congress is being held in two countries and also covers temperate and tropical zones. This will enlarge our professional experience and give us the opportunity to enjoy the hospitality and cultural tradition of New Zealanders and Queenslanders. Grasslands, in both countries, play a vital role in the economy, and here research has long been a key element in improving grassland productivity. We are all familiar with the great reputation of grassland science in this part of the world and the role that New Zealand and Australia have played in developing new plant material and technologies, many of which are today widely used throughout the world. I, personally, was very much impressed when, 28 years ago, I visited New Zealand and Australia for the first time to get acquainted with the progress in grassland science and practice in this part of the world. I can even say that this visit influenced my professional life very deeply. It is here that I had the opportunity to reinforce my belief that there is no efficient and sustainable grassland system without legumes. Here I learned that dairy cows could easily produce 3700 litres of milk per 300 days lactation without using any concentrates, but just by grazing a wellmanaged grass-legume pasture. Here I learned that there is always a legume species or cultivar suitable for every edapho-climatic condition. Here I learned that legumes were very sensitive to phosphorus levels and that the suitable use of trace elements could work miracles in certain areas.

Dear fellows, this is the second time that our Congress is held in New Zealand, since in 1956 the International Grassland Congress took place in this very same town of Palmerston North. Most of the problems tackled then, however, were quite different from our interests and concerns today. For instance, in 1956 a section was dealing with improving plants for different environments, while in 1993 we are looking for different plants to improve our environment which has been spoiled through the prodigious use of fossil energy. In 1956 we were also interested in analyzing the influence of microclimate on grassland production: today we are wondering how to stop or reverse climate change. Can grasslands do anything to solve the above problems? I believe they can, and I am sure that their contribution will involve a much wider use of legumes in grassland systems.

I would also like to tell you about some serious threats that our grasslands and forage crops are facing because of the lack of vision of many policy makers. I refer to the heavy use of grains and concentrates, whose consumption has been increasing continually during the last four decades, mainly due to subsidies and other misguided incentives. As a result, farmers are giving up trying to improve their grasslands and forage production. Do you know that almost half of the cereals produced in the world are used for animal feed, and that ruminants consume almost half of this? Do you know that there are areas in the world where grazing ruminants get no more than 15-20% of their energy requirements from pasture, and that feed grains and concentrates, even bread, may cover 65-75% of their requirements, the rest being met by crop residues or by-products. These policies often lead to ridiculous situations. Some time ago, during a visit to a Mediterranean country a colleague told me that he had to go to court to produce a technical statement on a case between two farmers. One, having a dairy cow unit, was requesting a big compensation from another (a barley producer) for selling him barley straw heavily contaminated with grain. The funny thing about this true story is that the dairy farmer was completely right, since he could buy from the government any amount of barley grain he wanted, at a third of the price he had to pay for the straw! Again, the other day, I discovered, in a Middle East country where barley grain was no longer subsidized, that the sheepproducers were buying large quantities of bread to feed their flocks since the price received for one kilogram live-weight of lamb could buy thirty kilograms of dried bread! And what about the heavy use of subsidized fertiliser nitrogen to increase pasture and forage yields, while suppressing all legumes and polluting the environment and how wrong macro-economic policies are responsible for the nonsustainability of some modern grassland systems, for the ruin of many fragile ecosystems or for the degradation of the environment? These are probably good themes for future congresses since such negative policies negate most of the efforts made by grassland scientists to develop efficient and sustainable production systems.

Appendix C-18 XVIII Congress - 1997

The XVIII International Grassland Congress, Winnipeg, Manitoba, and Saskatoon, Saskatchewan, Canada, 1997

Opening Ceremony Address (Nolan, 1997)

Dr. Tom Nolan, Teagasc, Athenry, Ireland; Chair of the Continuing Committee

Chairman and Vice-Chairman of the Board of Directors of the XVIII International Grassland Congress, Your Honour, Lieutenant Governor of the Province of Manitoba, Distinguished guests, members of the International Rangeland Congress, members of the International Grassland Congress, ladies and gentlemen. On behalf of the Continuing Committee, I am privileged to welcome you to the XVIII International Grassland Congress. What we will witness is the culmination of about six years of preparatory work by the Canadian Organizing Committee and on your behalf, I sincerely congratulate them for setting the basis for most interesting scientific and social programmes. There is the added opportunity for participants to visit parts of Canada and North America to enjoy a rich programme mix of scientific, social and cultural activities, travel through varied and beautiful landscapes and experience Canadian hospitality. Let all of us make the most of these opportunities.

Under the theme *Grassland 2000* this end of millennium XVIII Congress will update the present state of knowledge and perhaps more importantly identify research priorities to lead into the next century. It takes place at a time of great challenge to grassland scientists. Relatively recent developments in the production of disease and/or chemical resistant transgenic plants and the possibility that a cancer cure may be sourced from the African bush willow are examples of how natural grassland resources can be exploited for human use and why it is so essential to maintain floristic biodiversity. Market driven requirement for wholesome human food products at low cost will continue to dominate. This in turn emphasizes the need to understand the links between acceptability and intrinsic nutritional quality characteristics of food products and primary production methods as a basis for continued improvement.

Revision of the European Union Common Agricultural Policy, freeing up of world markets and marketing by the World Trade Organization, World Earth Summit conventions on environment protection and a host of regional and local regulatory interventions increasingly set the context for research and development. In this scenario scientists and commercial exploiters are now more aware than ever before that the great global grassland ecosystems resources must be exploited with prudence and passed on without damage to future generations. They are also aware that, in addition to their traditional interests on how ruminant production from forage could be improved, the manner in which these resources are used also affects other characteristics such as global warming, water quality and quantity, recreational amenity values and Carbon sequestration in the broadest global ecological context. In this context we congratulate Canada on the selection of Montreal as the location of the secretariat of the UN Convention on Biological Diversity signed at the Earth Summit in Rio de Janeiro in 1992.

New research paradigms are necessary to meet the challenges of the future. Grassland will continue to provide the main dietary source of ruminant livestock needs. Western European and North American grassland livestock farming based on capital, relatively low-cost grain, mature research and price supports has caused regional food surpluses and led to consumer concerns about product quality and undesirable environmental effects. Efforts to transfer this model to other areas did not achieve the expected success. For example, in Africa it largely failed, partly through a poor appreciation of the different social milieu and perhaps also to attempts to achieve too much too rapidly with inadequate research resources. Here the situation worsens, with the serious nutrition deficits affecting at least one third of the population of Sub-Saharan Africa combined with rapid population growth rate leading to increasing immediate need for food and consequent speeding up of grassland degradation in many instances.

Development in Africa has not been uniformly negative. It is following the worldwide trend of increased urbanization accompanied by the development of higher return enterprises as dairying and horticulture in peri-urban areas. It is ironic that while this development should be accompanied by increased domestic forage and grain production, per capita production of crops as grain and cassava decreased and grain imports increased at least seven-fold over the past twenty-five years. Imports of human food also continue to increase. After allowing for increases in poultry and other grain intensive livestock systems an increasing amount of grain is offered to ruminants. Product value to grain price ratio will always be one of the major determinants of grassland use worldwide with major consequences for overall land use. There is therefore a compelling need in Africa to increase domestic food production based on combining productive and protective exploitation of local natural resources. It is important that research adopts a holistic approach so as to ensure that advances as, for example, improvements in individual ruminant genetic capacity, must not compromise ability to utilize forage. I refer particularly to Africa because of my personal experience but the same problems exist in many other parts of the world.

The issues arising in food production and hence in grassland science differ widely from region to region. We appear in many countries to be facing a crisis in grassland research and in some locations the terminology applied to it is scarcely civil. The reality is very different. In many respects research on grassland plants and animal production from grassland has resulted in the most successful enterprise in Agriculture in the last fifty years. Members of the International Grassland Congress are entitled to be proud of this success. In fact, in the so-called developed countries we have been too successful and perhaps overextended the capacities of policy framers to control and manage increased output. Therein, I believe, lies much misunderstanding which could lead to a crisis in grassland research in future. We must acknowledge that researchers, by virtue of the nature and indiscipline imposed on their work, have not always recognized sufficiently the consequences of their success within the farm gate or village community. Neither have they appreciated fully the nature and complexity of the economic and social systems with which agriculture must interface. This crisis does not extend to developing countries except through imports of surplus production and efforts to export products to highly competitive and protected markets. Their primary problem is that of producing more food for rapidly growing populations from fragile and overstretched ecosystems where social and economic forces intrude more forcibly on the smallholder.

These thoughts lead on to what I believe is the great challenge facing grassland scientists. Dealing with the complexity that surrounds utilization of grassland, interacting with political and socio-economic outside forces with a far broader range of scientific disciplines to provide scientifically sound and sociably acceptable results as a basis for policy at local, regional and global levels is a formidable task. For example, the scientific programmes at this and previous Congresses address virtually all of the factors involved in understanding how an individual community might apply technology to make best use of its labour, grassland and livestock resources. There will always be a need to carry out so-called basic research and to develop new technologies in an ongoing dynamic manner. It could be argued, however, that at best we have shown in particular systems how to integrate the different components into a practical applicable package, which could predictably improve income and living standards. Results have often been disappointing due to the system being suboptimal when global considerations are taken into account. We are challenged to take the wider perspective to integrate these broader issues into our systems. This challenge is much more daunting in developing countries. One might ask if there is a clear and reliable recommendation available to a community which would integrate agriculture, rangeland, the different uses of shrubs and trees and water resources with specific sustainable animal production targets where marketing infrastructure is poor and land tenure systems is difficult. I submit that this is what is required particularly in developing countries. There is conflict between this requirement and the scientific protocol where specific biological hypotheses must be tested and understood but there comes a time when individual components must be tested as a whole and shaped to meet needs.

It appears that, worldwide, within unit efficiency, size and productivity will continue to increase due to their dominant effects on profitability which in turn is related to various economies of scale. This has serious consequences for the maintenance of rural population and social fabric and for urban evolution. Scientists and research managers must involve in these processes to identify problems, secure adequate research funding and also to market research findings to political and legislative agencies to provide a basis for improved development of grassland agriculture and those who engage in it. There is little doubt that progress will be closely related to the volume of support available.

Understanding complementary and competitive relationships in the biological, social and economic disciplines appears to be the central requirement for a successful research programme in the modern environment. We need to apply this insight to the challenges still remaining in the traditional heartland of our own work area. For example, with reference to my own research area, in grassland grazing use, research is generally directed to mono species ruminant uses when, under commercial conditions, mixtures of animal types are the norm. This research area requires much more attention and must be approached from the viewpoint that the increased number of variables involved, rather than being a problem, actually facilitates increased flexibility in utilizing resources.

The relatively recent increased recognition of the research extension process as a subject of study is a welcome trend and requires increased support. Following many years of relatively successful extension I am convinced that there are two essential requirements for success viz. identification by the client with the recommendation and confidence in the purveyor. The former will generally only be achieved by research which represents an embodiment of integrated components in a whole system, preferably tested under different degrees of stress. Confidence in the purveyor stems from this research background and is assessed by the potential adopter mainly based on perceived risk. The latter is an extremely fragile commodity which can be dissipated by failure with serious consequences. The absence of such a strategy appears to be the cause an existing dilemma between the need for the scientist to secure mature and reliable results as a basis for policy decision and a growing tendency by policy makers and direct users to demand quick results. For research to be successful, it is necessary that it be marketed properly to the adopter.

In agriculture, the perception of the problem may differ between the purveyor of research (researcher/advisor/extension officer etc.) and the targeted adopter (farmer/corporation etc.) and in many instances the research must explain what the problem is and why it is necessary to change. Also, it must be recognized that biological efficiency may not always result in improved income and that many factors which fuel the inertia of the status quo may preclude the adoption of new technology even where the economic and other benefits are well established.

Grassland scientists can be proud of their achievements in the past and it is this success which will prime their determination to meet the challenges of the future with confidence. The advancements and pace at which they will occur will largely depend on the financial and other resources allocated. During this Congress we will address these issues once more and I believe with great success. Let us also enjoy the opportunity to do so.

It is appropriate here that I should congratulate Professor Ross Humphreys, former Chairman of the Continuing Committee, on his recently published book where he traces the history of the International Grassland Congress and its evolution since its first meeting in Germany in 1927. His book, *The Evolving Science of Grassland Improvement*, was prepared specifically for this XVIII Congress and is recommended to all members.

Appendix C-19 XIX Congress - 2001

XIX International Grassland Congress, Saõ Pedro, Saõ Paulo, Brazil, 2001

Thoughts on the Next Ten Years (Clements, 2005b)

Dr. Robert J. Clements, Director, Australian Centre for International Agricultural Research, Australia; Chair, Continuing Committee of the International Grassland Congress

It has become a tradition for the Chair of the Continuing Committee to make a few comments about the future, and I would like to close by doing this. In doing so, I am aware that I am following in the footsteps of some illustrious predecessors. In 1993, Dr. David Crespo championed the use of legumes and noted the distortions in resource use that are sometimes caused by inadequate or ill-conceived government policies. At the same Congress in 1993, Dr. Ray Brougham urged us to become involved in the fight to raise public awareness of the benefits of grasslands research. He especially urged us to get involved in influencing policymakers. In 1997, at the Canadian Congress, Dr. Tom Nolan spoke about the complexity of the modern research environment, and again mentioned the need to influence policy formulation at the local, regional and global levels.

I speak to you from a different perspective. I speak as the Director of a research funding body. My organization, ACIAR (the Australian Centre for International Agricultural Research) is a facilitator and funder of collaborative agricultural research, with a firm eye on delivering benefits to developing countries. I think it may be the first time that the Chair of the Continuing Committee has come from such a position, and it certainly does give one a different view of the world. As I look at the bulk of the current research on grasslands, I find a good deal of it simply irrelevant to the needs of developing countries in the Asia-Pacific region. This is not entirely a new observation. In 1993, at the XVII International Grassland Congress in Rockhampton, Australia, the participants at the sessions on feeding animals in subtropical and tropical forage systems concluded that much of the grassland research being conducted in the tropics was of little relevance to end-users in developing countries and was not likely to be adopted because it paid inadequate attention to the economic, social, biological and farming systems constraints to adoption. Therefore, not surprisingly, my organization funds very little grassland research in the Asia-Pacific region. We are very proud of the grassland research we do support, and I am delighted that several of the project teams we are supporting are present at the Congress. Of course, there are many sources of research funds, and not every funder has such a strong focus on delivering benefits from research. But I urge every delegate here to think hard about the relevance of your research. Who is going to use the technologies you develop? If your research is not relevant, not only will the funds eventually dry up, but you may lead other researchers into irrelevance, to the detriment of our profession.

My second comment is about research innovation. All of us admire the truly innovative scientist – the person who moves us in new directions, who applies new science to attack old problems, who shatters myths, who forces us to re-think our comfortable paradigms, who sees room for progress where the rest of us can only see complexity. We need to recognize that many aspects of grassland science are now mature. This means beneficial changes in many fields of grassland science will be modest and incremental unless we take positive steps to seek truly novel approaches. We need to redefine grassland science. We need to bring it into the 21st century. We need to apply to it the most modern adaptations of information technology, biotechnology and modern social sciences. If we don't do this, we again run the risk of irrelevance and, in this case, the associated risk that by delaying the application of new science to grasslands for the benefit of mankind.

Australians have a reputation for speaking their minds plainly, and perhaps I should apologise for being so blunt. However, these are sobering thoughts, and they deserve careful consideration. Whether the targeted end-user of our research is the farmer, the conservationist, the policymaker, our fellow scientist, or even our students, we have an obligation to be as relevant to their need as we can possibly be. The importance of grasslands in the world demands nothing less. As we share our thought and results during the next few days, let us make a conscious effort to seek and provide evidence that our research is relevant and innovative.

Appendix C-20 XX Congress – 2005

XX International Grassland Congress, Dublin, Ireland, 2005

Opening Business Meeting (Allen, 2005)

Dr. Vivien Gore Allen, Paul Whitfield Horn Professor, Texas Tech University, Lubbock, USA; Chair of the Continuing Committee of the International Grassland Congress

Members of the International Grassland Congress, Distinguished guests, Ladies and Gentlemen:

On behalf of the IGC Continuing Committee, the organizers of the XX IGC, and grassland scientists and practitioners from around the world, I have the great privilege and pleasure of declaring the XX IGC open! This is the first time in the nearly 80-year history of the IGC that we have convened this Congress on this misty green Island called Ireland and it seems particularly appropriate to celebrate our 20th Congress here where forages and grazing animals are of such obvious importance and provide such an exquisitely beautiful landscape. Ireland! The very name conjures up images of lush grasses, peaceful pastoral scenes, and grazing animals. As my plane broke through the cloud layer and was on final approach into Dublin Airport the other day, it seemed that I was surrounded by a verdant green so intense that it was almost a shock to the senses - especially to one coming from the semi-arid High Plains of West Texas, the contrast was indescribable!

The world knows Ireland for many things, but Shamrocks and the Luck of the Irish come quickly to mind! I did a bit of research on these subjects before coming here and learned that the Shamrock, known the world over as a symbol of Ireland, literally means 'young, small clover' and is usually thought to be a member of the *Trifolium* genus - most likely white clover. If true, it is likely that the Irish Shamrock is the most widely known and adapted pasture legume in the world! Thus, I submit to you that anyone who has a bit of 'young, small clover' in their pastures can expect to have a bit of the Luck of the Irish in their pastures as well!

I would like to express my great appreciation to the Organizing Committee and to the members of all of the committees that it has taken to bring us to this day. My special thanks to Jim Flanagan, President of the XX IGC, Frank O'Mara, Secretary, and Roger Wilkins, Chair of the Scientific Committee. Since we left Brazil, these individuals have worked tirelessly to bring us all to Ireland. Their professionalism, dedication, enthusiasm, and just plain hard work have been an inspiration and a model for us all. Always there are numerous individuals that serve crucial roles in such an undertaking. While time does not permit calling each by name, our sincere thanks and appreciation goes out to each and every one of you. Please join me in expressing our thanks to this extraordinary group.

There is one other whom I would like to recognize, however. Many of you knew Jan Crichton, a member of the Organizing Committee, whose untimely death occurred a few weeks ago. We will miss her professionalism and her friendship. Since we left Brazil four years ago, there are others known individually to us whom we have also lost from our midst. Please join me in honoring their memory and the contributions of their careers. I think that they are indeed with us here this evening.

At this time, I would like to introduce the members of the Continuing Committee. I will ask each member of the committee to stand as I call your name: Dr. Luis Ramirez Aviles (Mexico; Region 2), Dr. Raul R. Vera (Chile; Region 3), Dr. Chaisang Phaikaew (Thailand; Region 4), Dr. Gavin Sheath (New Zealand; Region 5), Dr. Masakazu Goto (Japan; Region 6), Dr. Hossein Arzani (Iran; Region 7), Dr. Maria Ermelinda Vaz Lourenco (Portugal; Region 8), Professor Alain Peeters (Belgium; Region 9), Dr. Géza Nagy (Hungary; Region 10), Dr. Apollo Bwonya Orodho (Kenya; Region 11), Dr. Sila Carneiro da Silva (Brazil; Representing Previous Host Country).

My thanks to each of you. It has been a great privilege to work with you during the past 4 years.

VENUE FOR THE XXI INTERNATIONAL GRASSLAND CONGRESS

Many of you likely remember and perhaps were involved in discussions on two separate but converging issues over the past 12 years. If you served on the Continuing Committee during this time, you were certainly aware that the Peoples Republic of China had submitted a bid to hold the 18th and then the 19th IGC. In each case, although these bids were of great interest and had much potential, it was the decision of the respective Continuing Committee's to accept first the bid from Brazil, and most recently the bid that has resulted in our venue here today in Ireland. However, during the Congress in Brazil, discussions were held with the Chinese leadership and they were encouraged to submit yet a third bid for consideration by the IGC if they were indeed still interested.

The Continuing Committee left Brazil with a commitment to seek a third bid from China. In fact, at the invitation from China, I and three members of the Continuing Committee [Géza Nagy (Hungary), Gavin Sheath (New Zealand), and Masakazu Goto (Japan)], traveled to Inner Mongolia to look at the potential venue and to hold discussions with the leadership in China. This was a very promising visit and we felt that good progress was being made toward a bid to the IGC for 2009.

The second of the issues that was soon to converge was the ongoing discussion with the International Rangeland Congress concerning closer collaboration and the possibility of holding a joint Congress. These discussions went back at least as far as Canada in 1997 where delegates instructed the Continuing Committee to approach the IRC concerning a possible joint meeting. Following Canada, in 1997, Bob Clements (Chair of the IGC Continuing Committee) and Margaret Friedel (Chair of the IRC Continuing Committee) met in Australia and drafted a 2-page document that outlined arguments in favor of and against a shared congress (Appendix K). This was provided to all Continuing Committee members of both Congresses. There was strong support for a joint venue expressed by delegates representing Region 1 (United States and Canada) through the various forage-related organizations in this region. Support from other regions was more tentative and often stimulated vigorous debate but a message was emerging to explore such a possibility.

By 1999, Bob Clements (then chair of the IGC Continuing Committee) and I (as representative of Region 1) attended the IRC in Australia. Three Resolutions were drafted and were presented at the final business meeting as follows:

To promote a more efficient and effective interchange of information on all aspects of range and grassland science, and to meet common goals and objectives, the IRC endorses the concept of closer cooperation with the IGC.

The Chair of the IRC Continuing Committee should explore mechanisms for meeting common goals and objectives with the Chair of the IGC Continuing Committee.

The IRC endorses the concept of a shared conference with the IGC by the year 2007 and requests the Continuing Committee of the IRC to develop in collaboration with the Continuing Committee of the IGC the framework for a shared Conference Program and Procedures for selection of a host country.

Duane McCartney (Canada) and Len 't Mannetje (Netherlands) spoke in favor of these resolutions.

Resolutions 1 and 2 were passed but **Resolution 3** failed to pass and in fact the IRC was given a mandate by the delegates at that congress not to hold a joint meeting.

Other opportunities were emerging, however, that would be better addressed by a joint effort between the two Congresses than by either one alone. A prime example of this was the work beginning to provide more unity in concepts and terms used in our grazing lands science. Both Congresses agreed to work together in this Terminology

project that is still ongoing (<u>Chapter 6</u>). By the time the IGC met in Brazil in 2003, there continued to be rising support in favor of a joint venue with the IRC. At the final business meeting of the IGC, three Resolutions were passed unanimously outlining the steps to be taken to further enhance dialogue and cooperation between these two Congresses.

Unknown to us at that time, the IRC was also holding discussions concerning a possible IRC venue in China for their 2007 Congress. It remained unknown to either Congress that the other was holding such discussions until a chance conversation in Washington DC between Jim O'Rourke (then President of the Society for Range Management and IRC Continuing Committee Member) and me. At that point, with both Congresses in negotiation for a China venue, the discussions became much more interesting to say the least! Several things happened quickly at that point. In June 2002, as directed by a Resolution from our Congress in Brazil, I met with Maureen Wolfson, Chair of the IRC Continuing Committee, to discuss the possibility of a joint venue. As you can imagine, there were many concerns, none the least of which was the failure of the motion to pass in Australia virtually blocking the possibility of a joint Congress.

In August 2002, representatives of both the IGC and the IRC went to China and met with the leaders there. Several points emerged as follows:

- The consensus was that a joint meeting was preferable and that two, single Congress venues 2 years apart were not acceptable to either Congress.
- Neither the IGC nor the IRC had ever before met in China and both were very interested in this venue.
- It was found that possible topics for Congress sessions were of almost equal interest to both Congresses.
- A joint meeting was considered feasible by all the parties involved (China, the IGC, and the IRC).
- Because of the staggered 4-year rotation, it was decided that each Congress would need to move 1 year out of line to minimize the impact in the rotation of either Congress, thus, the target date was 2008.

A major impediment that remained was the mandate by the IRC in Australia against a joint meeting, but a major strength was the unanimous resolution in Brazil by the IGC to pursue a joint meeting.

Both Congresses agreed that if a joint meeting was held, it would be a truly joint meeting but immediately followed by both Congresses returning to their normal rotation schedules.

Much discussion and many meetings followed. I am very appreciative of the patience of all the parties involved as we worked through numerous questions and concerns. In 2003, at the IRC Congress in South Africa, the delegates voted to set aside the decision made in Australia and to accept the bid from China for a joint IRC/IGC Congress in 2008. In 2004, 1 year prior to our 2005 Congress as stipulated in our Constitution, we received the bid from China for the joint Congress.

I am pleased to be able to stand here today to tell you that by unanimous vote, the IGC Continuing Committee accepted the bid from China and I can, therefore, declare that the XXI IGC will be held in Hohhot, Inner Mongolia (29 June to 5 July, 2008) in a joint venue with the International Rangeland Congress.

In the audience today are Bob Clements, past Chair of the IGC Continuing Committee, Jim O'Rourke, now President of the IRC Continuing Committee, Gordon King, Secretary General of the IRC, Professor Yun Jinfeng, President of the Chinese Grassland Society, and Professor Nan Zhibiao, Dean, College of Pastoral Agricultural Science, Lanzhou University. These people along with many others have for a very long time played crucial roles in the development and ultimate success of this bid. I would also like to pay special recognition to Professor Hong Fuzeng, former Vice Minister of Agriculture and Honorary Professor at the China Agricultural University, and Professor Ren Jizhou, Academician of the Chinese Academy of Engineering, the preeminent Grassland Scientist of China and the Founding Director of the Gansu Grassland Ecological Research Institute. These two individuals, more than any others, have worked tirelessly and constantly for more than 12 years to bring this day about. They never gave up. Today their dream and their vision become a reality. Please join me in recognizing these two outstanding leaders.

FINAL THOUGHTS

It is at this point that tradition has allowed the chair of the Continuing Committee to make a few remarks and observations. Mine will be brief because of the length of this report but I feel compelled to share with you a few observations. My career has given me an extraordinary opportunity to travel and to see a great deal of the worlds grazing lands. It has also been an opportunity to get outside and look back at the grazing lands I call home. When you look back from outside, it often gives you a different perspective – you see things differently – but what I see are more commonalities of issues and challenges than differences around our world and what I see concerns me. When I speak of grazing lands, I use the term as defined in Terminology to be the all-inclusive term that includes extensive rangeland, intensive pastureland, and our grazable forestlands and croplands.

History teaches us that civilizations began in the grazing lands and it is intuitive to think that this should be so. History also teaches that civilizations have ceased to exist when the grazing lands were destroyed and again, this outcome should have been predictable given the dependence of these societies on the goods and services that the grazing lands provided. Why then is there not a great global outcry of alarm over the current and likely future impact on our grazing lands of today's societies? We are probably more dependent today on the goods and services provided by our global grazing lands than at any point in history. These services of course include not only food and fiber from grazing animals but clean air, clean water, stable and fertile soil, biodiversity of plants and animals, a magnificent collector of solar energy, open space, and many other values both tangible and esthetic. The worlds growing urgencies of water quantity and quality, energy, global warming, food quality and safety, soil erosion and nutrient management, desertification and many other of today's challenges can all find solutions, at least in part, within our grazing lands. Global populations are projected to increase by 30% by the year 2020 and to double by the end of this century. The demand for more grain, meat, and milk production to meet this growing population along with urban expansion, artificial inflation of land values, political and social mandates, conflicting agendas by private groups, political entities, and individuals, and comparative economic advantage of the land for other enterprises, will continue to put pressure on grazing lands and to convert them to other uses.

Our grazing lands cannot be replaced. We have no viable substitutes. Our grazing lands must be used but used within the context of management that ensures the functioning and productivity of these ecosystems for generations yet to come. We are doing a pretty good job at learning how to manage these ecosystems. It is their irrevocable loss to other objectives that troubles me deeply. Key perhaps to our challenge is our lack of ability to communicate to the public and to politicians and decision makers in a language that they understand, just how much depends upon our grazing lands. A reflection of this lack of communication is the difficulty in securing the long-term funding at levels necessary to support the grazing land research and education needed across our ecosystems. Of no less concern are legal and economic constraints that can impede and prevent land from passing from one generation to the next and the social and economic challenges that cause our youth from all backgrounds to look away toward more attractive careers in other disciplines. From where will the next generation of scientists and practitioners come?

Let the word go forth from this XX International Congress that the world's grazing lands, whether extensive rangeland or planted pastures, must be protected, conserved, and valued as an irreplaceable resource and ranked among our most endangered ecosystems. The future of our human existence depends upon it.

Appendix C-21 XXI IGC and the VIII IRC - 2008

XXI International Grassland Congress/VIII International Rangeland Congress, Hohhot, Inner Mongolia, Peoples Republic of China, 2008

Building Bridges: Grasslands to Rangelands (O'Rourke, Sheath, and Allen, 2008)

James T. O'Rourke, Chadron, Nebraska, USA; Chair IRC Continuing Committee

Gavin Sheath, AgResearch, New Zealand; Chair IGC Continuing Committee

Vivien Allen, Texas Tech University, Lubbock, Texas, USA; past Chair IGC Continuing Committee

Given the uniqueness of this joint International Grassland and Rangeland Congress it is fitting that the Chairs of these two organizations give their opening address jointly. It is also appropriate that the events and actions that have led to this joint event are recorded.

From the earliest of beginnings, our global grazing lands have been essential to human survival. Our relationship with grazing lands has been increasingly exploitive, but there is now a slow reawakening of our interdependence with the many services provided by grazing lands. Sustaining the natural capital of our grazing lands is crucial, as these areas represent a very large part of our global terrestrial ecosystems. This challenge is grounded in the socio-economic expectations of land users and nations.

Over time, research and development in our global grazing lands has evolved into highly specialized areas. A reductionist emphasis has led to the understanding of underlying functions and mechanics of grazing lands. This has underpinned increased productivity and product quality in pasture and harvested forages. In contrast, work in rangeland ecosystems has been more oriented towards integrative ecology and sociology. This difference in emphasis led to the separation of the International Grassland Congress (IGC) and the International Rangeland Congress (IRC) in the 1970s.

Ironically, since then many common areas of interest have emerged in environmental and social concerns, ecology and multifunctional uses of our grazing lands.

Increasingly, new bridges are needed to provide interaction and synergy between those people working in rangelands and grasslands.

By the 1990s a groundswell of interest in closer coordination between ICG and IRC was surfacing. Delegates at the XVIII IGC in Canada in 1997, instructed the Continuing Committee to approach the Continuing Committee of the IRC about the possibility of a joint meeting of the two Congresses, and on possible eventual amalgamation of the two Congresses. In 1997, Bob Clements (Chair, Continuing Committee, IGC) and Margaret Friedel (Chair, Continuing Committee, IRC) met and set out arguments for and against a shared Congress with a view to ongoing closer coordination of the Congresses. They suggested that such a shared Congress might take place by 2003.

In July, 1999, the IRC met in Townsville, Queensland, Australia. Three motions were put to the delegates as follows: 1) to promote a more efficient and effective interchange of information on all aspects of range and grassland science, and to meet common goals and objectives, the IRC endorses the concept of closer cooperation with the IGC, 2) the Chair of the IRC Continuing Committee should explore mechanisms for meeting common goals and objectives with the Chair of the IGC Continuing Committee, 3) the IRC endorses the concept of a shared conference with the IGC by the year 2007 and requests the Continuing Committee of the IRC to develop in collaboration with the Continuing Committee for selection of a host country. Motions 1 and 2 were passed but motion 3 failed to pass.

Two years later in 2001 at the XIX IGC Congress in São Paulo, Brazil, three Resolutions were presented to the delegates at the final business meeting, with the first two being the same as the first two at Townsville. The third was: the members of the XIX IGC request that the Chair of the IGC Continuing Committee meets with the Chair of the IRC Continuing Committee within the next 12 months to jointly identify and promote shared activities for meeting common goals and objectives. All three Resolutions were passed unanimously.

Meanwhile, China had submitted an unsuccessful bid for the IGC venue at both the 1997 and the 2001 IGC Congresses. Interest was high, however, in developing a bid that would be submitted in Ireland in 2005 for the 2009 IGC venue. To this end, Vivien Allen, IGC Chair, Gavin Sheath (Region 5), Masakazu Goto (Region 6), and Géza Nagy (Region 10) traveled to China in July, 2001, to discuss the potential of China being a venue. It was agreed that the Continuing Committee would work with the Chinese

organizers in developing the bid for XXI IGC. Discussions progressed between the IGC Continuing Committee and the organizers in China over the next several months.

In December, 2001, Vivien Allen (chair, IGC) and Jim O'Rourke (member of IRC Continuing Committee) attended a meeting in Washington, D.C. It was revealed that the IRC Continuing Committee was anticipating a bid from China for their 2007 venue while the bid under discussion between the IGC and China was for the 2009 IGC venue. Neither Congress had been in China previously. Thus, both were interested in this location but there were obvious concerns about holding two major international Congresses on grazing lands just 2 years apart. A possible solution was to combine these meetings, but Motion 3 from Townsville clearly stood in the way. Much discussion followed with the organizers in China and between the leadership of the two Congresses.

Thus, in June, 2002, Vivien Allen (IGC chair) and Maureen Wolfson (IRC president) met in Chicago, Illinois, to discuss the possibility of a joint venue in China for the two Congresses. It was agreed that: 1) China would be encouraged to submit a bid to both Congresses for a shared meeting in 2008 (one year out of the rotation for each Congress); 2) the IRC would pursue other bids as well; 3) the IGC would continue to work toward a China venue. In lieu of the failed Motion 3 from Townsville, it was agreed that at the VII IRC in Durban, South Africa in 2003, the concept and opportunities of a joint meeting would be presented to the Delegates. It would be emphasized that this was not a suggestion of permanent merging of these Congresses but was a unique opportunity of this particular venue. The vote in Townsville would have to be reversed before the Continuing Committee could vote on the bid from China. Thus, the delegates would be voting on the concept of a shared venue, not on the acceptance of the bid.

At the 2003 IRC held in Durban, South Africa, there was interest from the Chinese in a joint Congress to be held in 2008 with IGC in Hohhot, Inner Mongolia, People's Republic of China. Following the vote against such an event at the 1999 IRC in Townsville, considerable lobbying occurred during the Durban Congress to convince the membership of the advantages of doing so. The China bid was unanimously accepted. Following the IRC's acceptance of the bid by China for a joint IGC/IRC Congress, the IGC Continuing Committee received a parallel bid from China at the Dublin IGC in 2005. The bid was accepted unanimously. Thus, 8 years after discussions officially began in Canada expressing support for the concept of holding a joint IGC/IRC Congress, the bids were accepted, and the venue was set for Hohhot in June of 2008.

Since late 2005, Gavin Sheath (IGC chair), Jim O'Rourke (IRC chair), and Gordon King (IRC secretariat) have worked with the China Organizing Committee. The fruits of this joint work are evident in the sponsorship gained and the program developed. Global sponsorship has exceeded 500,000 US\$ and is derived from a wide range of sources. The lesson – a joint Congress ensured two similar organizations were not competing for increasingly scarce funding support. The program is a well-balanced mix of production, sustainability and people themes – the essence of multifunctional grasslands and rangelands. The lesson – we will make best progress in sustaining the world's grazing lands and communities when we draw on the best brains and experience.

This IGC-IRC 2008 Congress provides an opportunity to build bridges between researchers working in different science disciplines and people who are working to develop sustainable systems and communities in different regions of the world. While work involving singular disciplines of study has provided knowledge of greater depth, we also need a better understanding of the interactions and emergent properties of our grazed ecosystems. The long-standing principles of ecology, armed with the analytical power of simulation modeling, has a major role to play in understanding and designing sustainable systems of the future.

People must be an integral part of any future system design. They are not observers and their expectations will shape the way grazed ecosystems will be managed. While some people seek high quality food and a pristine environment, we must recognize that many other communities simply seek a little more food and economic wealth to survive. Good science must not take a political position with regards to resolving tensions and managing our grazed lands in a better way. Rather, it must inform the various communities of interests. In the end, wise solutions will be a balance of tradeoffs that are based on informed decisions and actions.

It will be interesting if the desired changes we seek in people will occur voluntarily or will require incentives and regulations. Like most things in life, a mix will probably be required to ensure the necessary knowledge and motivation is in place.

As we address the urgencies of global warming, a growing global population that demands higher living standards and a better diet, social stability, alternative energy sources, and protection of our environment and natural resources, we increasingly turn to our global grazing lands resources to find solutions. New bridges have brought together the IGC and the IRC for the first time in history in Hohhot, Inner Mongolia in the Peoples Republic of China. Perhaps history will look upon this as the stimulus for new collaborations that will lead ultimately to solving these grand challenges.

Appendix C-22 XXII Congress 2013

XXII International Grassland Congress, Sydney, Australia, 2013

Revitalising Grasslands to Sustain our Communities (Kemp and Michalk, 2013)

Professor David Kemp, Charles Sturt University, Orange, New South Wales, Australia; President of the XXII International Grassland Congress

Professor David Michalk, New South Wales Department of Primary Industries, Orange, New South Wales, Australia; Coordinator, Scientific Program and Chief Editor

Grasslands occupy 54% (52.5m km²) of the world's ice-free land area, one-quarter of the world's human population live on and around grassland, one-tenth of the world's population is involved in animal production, one-third of the world's livestock (1.5 billion) rely on grassland and this is likely to increase, and the world will soon have 4b head of livestock. Grazing lands occupy some 400m ha of Australia approximately 60% of the continent, making grasslands the largest collection of ecosystems in the country.

Grasslands are the dominant ecosystems in many countries, either remaining as resources for grazing, watershed and biodiversity conservation or now being used for crop production, often with a grassland phase. Grasses and associated species sustain landscapes, ecosystems, livestock and communities across the globe. Many of the world's cereals are grasses. The future of humankind depends deeply on understanding, managing and sustaining grasslands.

Since 1927, the International Grassland Congresses have been the premier event where the current status of grasslands is updated, and the latest themes of grassland research and development are presented. Grassland has always been widely defined as any system that makes uses of grasses and other plant types not only to support livestock production, but to improve the health of these globally important ecosystems to sustain livelihoods and enhance people's enjoyment from their use for recreation, sport or other purposes. There are many common elements across these diverse systems and the great benefits of the Grassland Congresses is that people are brought together from diverse fields and this interaction between colleagues facilitates learning that stimulates future research.

Revitalising Grasslands to Sustain our Communities

The theme for the 22nd International Grassland Congress acknowledges that grasslands include many systems where real threats exist to future productivity and to the communities dependent upon grasslands. Yet grasslands and their importance are often poorly recognised by Governments, as is the need to provide the support services to sustain these systems and the communities that depend upon them. Declining support for agricultural research and development around the world is leading to a plateauing in yields and exposing societies to an increased risk of severe problems in the future. There are rapid changes taking place in the world environment and this Congress recognises that between developed countries and developing nations there are often, different responses to these changes. Population pressures, climate change, food security, declining water resources and reduced energy reserves will impact profoundly on grassland resources and their management. Competing uses for grasslands mean that there are many conflicts, and a common challenge is how to resolve the potential conflicts between livestock production and the environment? The Congress aimed to encourage and support revitalisation processes in terms of:

- Enhancing the traditional role of grazed grasslands in sustainable food and fibre production;
- Shaping grasslands towards new environmental and community roles in response to climate and water imperatives as well as the traditional production and sustainability objectives;
- Encouraging more young scientists, in Australia and across the world, to become involved in addressing the issues of multiple goals in grassland management; and
- Closing the gap between developing and developed nations in grassland science and management.

As well as the interchange of information on the latest research and development across diverse fields the International Grassland Congresses have always provided excellent opportunities to see grassland systems in new and different contexts.

The International Grassland Congress and Australia

The first time the International Grassland Congress was held in Australia was in 1970 at Surfers Paradise in Queensland. That Congress celebrated the very impressive developments in tropical grasslands and forages in which Australia played a key role. In 1993 there was a joint Congress between New Zealand and Australia with part of that moving Congress being held at Rockhampton in Queensland to again celebrate the very impressive work being done in tropical grasslands and rangelands. The 22nd International Grassland Congress was the first time that it had been held in southern Australia, with more opportunities to review the diversity of work being done across the subtropical, temperate and Mediterranean environments. Australia has been prominent in the selection and use of annual and perennial legumes for both grassland and cropping systems. Much of this technology which aims to fatten livestock at pasture has been shared with the world through publication, collaborative research networks, and aid programs. Research in other countries has been equally successful in developing forage production and conservation strategies for intensive livestock systems.

The program reported in these Proceedings provided an opportunity to again showcase to the world and Australian communities, how Australia's and the World's largest natural land resource, grasslands, can be managed to achieve a balance between production, environmental, economic, social and political objectives.

The Scientific Program and the many associated Congress events were designed with the above themes in mind. The challenge given to delegates was to broaden their thinking beyond the implications for specific problems under study to embrace the wider issues within which we all work. Some of these challenges are:

- What trends, problems and solutions are occurring in food and fibre production from grasslands continent by continent, and the services and policies to support them?
- How is grassland management adjusting to population pressures, food security, climate change, declining water allocations for agriculture and reduced energy availability?
- How are tools, processes and policies developing to resolve the competition for grassland resources to meet agricultural and environment imperatives?
- What technologies and innovations have been added to the pool of knowledge for the study and management of grasslands?
- Are the drivers for more effective grassland management coming from technology, ecosystem management, cultural and community forces or markets?
- How do grassland priorities and imperatives vary around the world, particularly between developed and developing nations?
- What markets are available for ecosystem services and how are these markets organised?

- How are new genetic technologies being used in plant breeding and grassland management?
- What changes are happening in the roles of scientists, land and livestock owners, and communities in influencing the management of grassland resources?
- What are the strengths and weaknesses of various models and approaches to Research, Development, Education and Extension, in terms of the balance of short, medium and long-term projects, their funding by government, producers, communities and agribusiness, and their impact on the well-being of communities?

In addition to the presentation of papers forums were held to review the current issues confronting early career researchers and farmers across the globe. The Early Career Researcher Forum had the objective of "Making the grass greener for early career grassland researchers" through a focus on how Early Career Researchers can forge a career and conduct high quality research on grasslands when there is a global shift to decrease investment in research. The Farmers Forum showcased progressive grasslands farming systems from different parts of the world; highlighted challenges and opportunities facing grassland-farming systems in 2013; and demonstrated the mutual respect between farmers and those involved in research and development as they collectively work to address local to global problems. The outcomes of these forums will be published separately.

A selection of the Plenary and Keynote papers presented have been chosen for publication, with additional material, in special forthcoming issues of Crop and Pasture Science, Animal Production Science and the Rangeland Journal. The Congress papers will also contribute to the first issue of a new, open-access online journal, Tropical Grasslands–Forrajes Tropicales, to continue the tradition of the former Tropical Grasslands (published by the Tropical Grassland Society of Australia Inc. during 1967-2010) and the former CIAT Journal Pasturas Tropicales (1984-2006).

These Proceedings report the 696 Plenary, Keynote, Oral and Poster papers presented at the 22nd International Grassland Congress. This is the record of the current state of knowledge of grasslands in 2013.

Appendix C-23 XXIII Congress – 2015

XXIII International Grassland Congress, New Delhi, India, 2015

From the Chairman's Desk (Ghosh, 2015)

Dr. P. K. Ghosh, Director of the Indian Grassland and Fodder Research Institute, India; President of the XXIII International Grassland Congress

The first International Grassland Congress (IGC) was held at Leipzig, Germany during 20 to 31 May, 1927, and the participants were only 16 scientists from 7 European countries viz. Austria, Denmark, Finland, Germany, Norway, Sweden and Switzerland. They assembled in Bremen and made a study tour through north-west Germany, visiting Emden, Berlin and Dortmund and finally arrived at Leipzig, where there were two days of scientific discussion on different aspects of grasslands. Since then IGC is promoting interchange of information among the participated counties on all aspects of natural and cultivated grasslands and forage crops for the benefit of mankind, including sustained development, food production and the maintenance of biodiversity. During its memorable and remarkable journey over the years (1927-2013), the IGC Committee has organized 22 numbers of congresses. These twentytwo International Grassland Congresses were held in every continent except Africa, and researchers/scientists from North America, Western Europe and Australia and New Zealand dominated the proceedings. In the series, we are organizing 23rd IGC, first time in India. Earlier in 1977, Prof. S.C. Pandeya, a renowned ecologist and then outgoing chairman of the Continuing Committee, was expected to host the XIV Congress at New Delhi, India, but his proposition could not be materialized. The XIV Congress was hosted by the American Forage and Grassland Council, at Lexington, Kentucky, USA, in 1981. Now that dream of Prof. S.C. Pandeya has been realized and we are hosting 23rd IGC at New Delhi as a third Asian country after Japan (1985) and China (2008).

Dr. D.M. Mwangi, Director of the Non-Ruminant Research Institute, Kenyan Agricultural Livestock Research Organization; Chair of the Continuing Committee (Mwangi, 2015)

I take this opportunity to welcome all members to the business meeting. A number of regions including Region 11 will be electing their representatives. As Region 11 which I represent will be electing a new representative the Continuing Committee will have

a new chairman and I will be announcing the new chairman soon. Other regions that will elect their representatives include Region 3 (South America), Region 6 (East Asia), Region 7 (Middle East), Region 8 (Mediterranean) and Region 10 (Northern Eurasia). I want to take this opportunity to thank all of you for the support I have received as the chairman of the Continuing Committee and request that you extend the same to the incoming chairman.

On behalf of the IGC Continuing Committee, I take this opportunity to congratulate the Indian Organizing Committee led by Dr. P.K. Ghosh for putting together this congress in such a short time. It is only 2 years since the congress in Sydney and here we are in New Delhi. The team has put together a comprehensive programme both technical and social and for the next few days, a number of important issues will be discussed.

This was expected to be a joint IGC/IRC Congress, however despite all efforts made this did not materialize. The IGC Continuing Committee will continue working with IRC to plan for a joint meeting in the near future.

Appendix D Letter to Richard Geith

Deutsche Landwirtschafts-Besellschaft

Uckerbau=Ubteilung.

Telegramm-Udreffe: Randbrichffdaft-Beellin. Fornsprecher: Umt Vollendorf 2690. Bank-Konten: 1. Preußliche Central-Genofienichafts-Raffe, Berlin E 2. 2. Deutliche Vant, Derlin W 8. 3. Direttion der Distonto-Gefellichaft, Berlin W 8. 4. Rur- und Neumärtliche Ritterichaftliche Darlehnstaffe, Derlin W 8. 5. Dreeddner Zant, Derlin W 56. 6. Deutliche Raiffeilendant 21.-G., Berlin GW 11. Politighedamt Berlin

Konto 2173.

alft.-3.: ADW.Kg.

(Bei Antwort wird um Angabe des obigen Altenzeichens gebeten). Berlin G28 11, den 3.Oktober 1929. Deffauer Str. 14. P.

Herrn

Diplomlandwirt Geith Leipzig S. 3. Fockestr.35

In der Zeit vom 21.-31.Mai 1927 fand in Sachsen die erste Versammlung der Weide- und Wiesenwirte aus den nord- und mitteleuropäischen Ländern in Deutschland statt. Die bei Ihnen gefundene freundliche Aufnahme und gastliche Bewirtung hat wesentlich zu dem guten Gelingen dieses ganzen Unternehmens beigetragen. Wir möchten daher nicht verfehlen, Ihnen für Ihre liebenswürdigen Bemühungen und die den Teilnehmern erwiesene Gastfreundschaft, die allen Beteiligten stets in schönster Erinnerung bleiben wird, unseren ergebensten Dank auszusprechen. Als äußeres Zeichen hierfür gestatten wir uns, Ihnen anliegend den Bericht über die genannte Tagung zu überreichen.

Deutsche Landwirtschafts-Gesellschaft

Ackerbau-Abteilung

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I

Appendix E Statutes of the Association

In the Report from the III Congress, Zürich, Switzerland, 18 to 20 July, 1934 (ELVA, 1934).

Statues (Statutes) of the International Grasslands

Congress Association

I. Name, seat and object of the Association.

Par. 1.

The International Grassland Congress is an Association formed for the purpose of facilitating the exchange of scientific and practical experience in grassland management.

The central office of the Association is in Leipzig. This town is at the same time the seat of the Association.

II. Membership.

Par. 2.

The Association consists of ordinary, extraordinary, and honorary members, in addition to promoters and friends of the Grassland Congress.

Ordinary members are individuals who are considered experienced representatives of grassland science in the countries comprising the Congress area, and who, admitted either as individuals or as representatives of scientific and agricultural bodies, are prepared to co-operate in carrying through the work of the Congress. In addition there may also be admitted as ordinary members individuals not residing in the Congress area, insofar as they play a scientific or practical part in grassland management.

Extraordinary members are associations, corporations and commercial enterprises in the Congress area which are endeavouring to promote grassland farming in a scientific or practical manner.

Persons who have rendered special service to the Congress or its objects may be nominated as honorary members.

The Congress is comprised further of promoters and friends. Promoters are:

associations, corporations, and commercial enterprises which make a donation of not less than RM 1000.- to the Congress.

Friends are:

all those who support the Congress by regular subscriptions.

The amount of the ordinary member's annual subscription is as a rule RM 10.— or the value of this sum in gold, reckoned at the date of the Association's foundation. The general assembly may increase or reduce this amount, their decision to hold good until the next general assembly.

The extraordinary members must pay an annual subscription, the amount of which is left to their discretion; in the case of corporate members, however, it must not be less than RM 50.—. A donation of RM 1000.— purchases an extraordinary membership of the Congress for life for corporations, associations and commercial enterprises situated in the Congress area.

All members' subscriptions are to be paid direct to the central office or to a trustee nominated by the executive body.

The honorary members pay no subscription.

Par. 3.

The executive body makes all decisions concerning the admission of ordinary and extraordinary members. Honorary members are nominated by the general assembly.

The retirement of a member may only take place at the end of a calendar year. The executive body must receive six months' notice thereof in writing. If a member has retired and wishes to take part in a subsequent Congress, he must pay the amount of the subscriptions which he would have paid in the interim if he had not retired.

In justifiable cases the executive body may liberate members re-entering the Association from the payment of these arrears.

Par. 4.

Each member shall receive the reports of the Congress free of charge. Current or periodic publications may be obtained for a fixed payment, the amount of which is to be determined by the executive body.

Par. 5.

Associations, corporations, etc. must notify the central office not later than 14 days before the beginning of the Congress of the person who is to represent them.

III. Administration and activities.

Par. 6.

The affairs of the Association are controlled by:

- 1. the executive body,
- 2. the general assembly and the Congress,
- 3. the central office,
- 4. the auditors.

Par. 7.

The executive body consists of:

1. the president of the next Congress as chairman,

2. the president of the Congress last held, and

3. the organizer of the central office.

If the two first members of the executive body are prevented from acting their place is to be taken by deputies elected by the general assembly.

Par. 8.

The chairman, or, if he is unable to act, his deputy, represents the Association judicially and extrajudicially. The executive body is entitled to take part in all committee meetings. The executive body makes decisions concerning the admission of ordinary and extraordinary members, executes the business of the Association so far as this is not reserved to the central office, and controls expenses.

The members of the executive fulfil their funktions without remuneration.

V. Members' assembly.

Par. 9.

The members' assembly is divided into a business section (the general assembly) and a scientific section (the congress). It shall as a rule be summoned by the executive body every third year, the right being reserved to summon it earlier. All members shall be invited to attend. The invitation is to be sent in writing not later than three months before the holding of the Congress.

Par. 10.

Only the ordinary members have the right to vote in the members' assembly. Not less than 10 ordinary members from at least 5 countries constitute a quorum. A three-quarters majority of those entitled to vote is necessary for the alteration of statutes.

Resolutions are to be embodied in minutes. The minutes are to be signed by the chairman and by an ordinary member elected for the purpose.

Par. 11.

The special functions of the general assembly are as follows: To elect the president of the next Congress, to determine the place and date of the next Congress, to elect the organizer of the central office, to elect the auditors and their deputies, to nominate honorary members, to receive and approve the annual report and auditors' report, to elect any subcommittees which are deemed necessary.

It is the general assembly, further, which makes decisions concerning the alteration of statutes, the dissolution of the Association, and notices of motion which may have been submitted.

VI. The central office.

Par. 12.

The organizer of the central office is charged with the carrying out of the resolutions passed by the members' assembly, the custody of the Association's property, the administration of its funds and the annual statement of accounts.

VII. The auditors.

Par. 13.

The administration and accounts of the central office and of the Association shall be examined annually by two auditors or by a firm of accountants. The auditors may not be members of the executive body, nor may those persons who are chosen as their deputies in the case of their being unable to act.

The organizer's annual report and statement of accounts and the auditors' report shall be furnished to each member.

VIII. Dissolution of the Association.

Par. 14.

In the event of the dissolution of the Association its funds shall accrue to the Universities of Upsala and Leipzig. Dissolution can only take place if it has been voted by a three quarters majority in the general assembly of two successive Congresses.

Ratified by the assembly in Bern 28th July 1934.
Appendix F The Constitution

Appendix F-1 Rules of Procedure - 1952

RULES OF PROCEDURE OF THE INTERNATIONAL GRASSLAND CONGRESS

Adopted at the VI International Grassland Congress, State College, Pennsylvania, USA, 1952

Section I - Categories of Membership

Article 1. There shall be the following categories of participants in the Congress: *Official Delegates:* Official representatives of governments. *Members:* Scientists, technicians and others interested in the conservation, improvement, management, and utilization of grasslands. *Associates:* Students and members of the families of official delegates and members.

Section II - Officers of the Congress

Article 2. Temporary President: The Chairman of the Organizing Committee for the Congress shall be the Temporary President of the Congress, and shall preside until the Congress elects a Permanent President.

Article 3. Permanent President and Vice Presidents: The Permanent President shall be elected by the official delegations to the Congress. Each country represented by an official delegation shall have one vote.

The official delegations to the Congress shall also elect two Vice Presidents who in the absence of the President shall preside in rotation in alphabetical order by country in English.

Article 4. The duties of the Permanent President shall be:

- (a) To preside at the plenary sessions of the Congress. In his discretion he may delegate the chair.
- (b) To concede the floor in the order in which requested.
- (c) To decide all questions of order raised during the debates of the Congress. Nevertheless, should any delegate or member so request, the ruling made by the chair shall be submitted to the Congress for decision by a two-thirds vote.

- (d) To call for votes and to announce the result of each vote to the Congress.
- (e) To determine the order of business.
- (f) To prescribe all necessary measures for the maintenance of order and compliance with the rules of procedure.

Article 5. Secretary General and Deputy Secretaries General.

The Secretary General and Deputy Secretaries General shall be appointed by the Government of the United States of America.

The duties of the Secretary General and Deputy Secretaries General shall be:

- (a) To organize, direct, and coordinate the work of all personnel assigned to the Secretariat of the Congress.
- (b) To serve as principal adviser to the President of the Congress on parliamentary, procedural, and protocol matters.
- (c) To receive, distribute, and answer the official correspondence of the Congress in conformity with the resolution of that body.
- (d) To have prepared the necessary documentation for the Congress including the minutes of the plenary sessions and section meetings.
- (e) To distribute among the committees and sections the information on which they are required to present reports and place at the disposal of the sections everything necessary for the discharge of their duties.
- (f) To prepare and circulate notices of the hour and place of meetings and other functions of the Congress.
- (g) To perform such other duties as may be assigned to them by the rules of procedure, by the Congress, or by the President of the Congress.

Article 6. Section Officers: The sections shall each elect a chairman and two vice chairmen. The convener shall be the secretary of the section.

Section III - Voting

Article 7. All official delegates and members shall have the privilege of voting on such matters as require a decision of the entire Congress, except on a question of organization, in which case each country shall have one vote only. Decision will be taken by majority vote.

Section IV - Sections

Article 8. The Congress shall be composed of the following Sections:

Section A - Genetics and Breeding.

Section B - Improvement and Management of Pastures, Meadows and Turf.

Section C - Improvement and Management of Range Lands.

Section D - Ecology and Physiology of Grasslands.

Section E - Soil Management and Fertilization.

Section F - Seed Production and Distribution.

Section G - Soil and Water Conservation.

Section H - Harvesting and Preservation of Forages.

Section I - Use of Forage in Livestock Feeding.

Section J - Machinery.

Section K - Experimental Procedures in Grassland Research.

Section L - Improvement and Management of Tropical Grasslands.

No other sections than those listed above shall be organized. The various sections may meet simultaneously.

Section V - Languages

Article 9. The official languages of the Congress shall be English, French, and Spanish. English shall be used as the working language in the conduct of deliberation and in the drafting of the conclusion of the Congress. However, discussions from the floor may be conducted in any of the three languages.

It is permissible to speak in other languages if the speaker furnishes interpretation into an official language.

Section VI - Papers

Article 10. The Organizing Committee shall issue invitation for papers. In general, the following regulation shall govern the submission of sectional papers:

- (a) Each paper shall be accompanied by an abstract of not more than 400 words.
- (b) Papers shall be limited to 3,000 words, and the time of presentation to 20 minutes.
- (c) All papers shall be typewritten.
- (d) Papers and abstracts should be submitted in one of the three official languages.
- (e) Authors who may desire to revise their papers subsequent to the Congress must submit these revised papers not later than ten days after the conclusion of the Congress.
- (f) Papers may be accompanied by illustration for purposes of presentation. It is suggested that illustrations be limited in number. No photographs and only absolutely essential graphs and line drawings will be published in the Proceedings.
- (g) In view of the desire to take full advantage of the progress made in recent years, the papers submitted should have special reference to the trend of recent development in the subjects concerned.
- (h) Final decision on all matters related to publication of papers in the Proceedings shall rest with the Secretary General.

Section VII - Discussions

Article 11. At the discretion of the presiding officer, as determined by availability of time, each speaker from the floor may be limited, in the discussion of any one paper, to speaking one time and not to exceed three minutes.

The chairman of any session may give the floor to persons not delegates or members but who are particularly qualified to discuss the subject under consideration.

Section VIII - Motions, Resolution, Recommendations, etc.

Article 12.

- (a) All motions, resolutions and recommendations shall be presented in one of the official languages.
- (b) If it is desired to offer a motion that applies to a question not appearing on the agenda, it must be presented in writing to the chairman of the section or to the Secretary General.
- (c) All resolutions pertaining to the agenda of any of the sections shall be presented in writing to the chairman of the section.
- (d) It is the duty of the secretary of each section to prepare recommendations, resolutions or conclusions of the discussions pertaining to the work of the section.
- (e) The presentation of any resolution shall not exceed five minutes and the discussion by any one member shall not exceed three minutes.
- (f) All resolutions to be presented in plenary sessions shall be submitted in writing to the Secretary General.
- (g) The resolutions of the Congress shall be acted upon in plenary session of the Congress and decided by majority vote.

Section IX - Fees

Article 13. The registration fee for those official delegates and members not desiring to obtain copies of the published Proceedings will be ten dollars (\$10.00). The registration fee for each official delegate and member desiring a copy of the published Proceedings will be fifteen dollars (\$15.00). The registration fee for associates will be five dollars (\$5.00).

Section X - Approval and Amendments to the Rules

Article 14. These provisional rules shall be approved in the opening business session of the Congress and shall be subject to subsequent modification only by a vote of two-thirds of the official delegation's present, each official delegation having one vote.

Section XI - Report of Proceedings

Article 15. A Report of the Proceedings of the Congress will be printed and forwarded to all participants in the Congress who have paid the prescribed fee upon registration. The Report of Proceedings shall be published in English except for papers incorporated therein which have been submitted in one of the other official languages.

Appendix F-2 Rules of Procedure - 1966

RULES OF PROCEDURE OF THE INTERNATIONAL GRASSLAND CONGRESS

Adopted at the X International Grassland Congress, Helsinki, Finland, 1966

Rules of Procedure:

The following rules, which had been circulated to members, were approved:

Participants: There will be three categories of members: Full Members, Associate Members and Day Members.

The President and Vice-Presidents will be elected at the Opening Meeting.

The President should preside at all business meetings but when he is unable to do so his place will [be] taken by one of the two Vice Presidents.

Sectional Chairmen have been appointed by the Organizing Committee: their names are published in the printed Program.

Points of Order, Whoever occupies the Chair will rule on all points of order.

- **Voting:** Each Full Member of the Congress will be entitled to one vote, but the total number of votes available to the members from any one country will be limited to 30.
- **Official Language:** The official language of the Congress will be English and all papers will be in that language. In presenting a paper, or in discussions, an interpreter may be used, but the speaker must provide his own interpreter
- **Presentation of papers:** The author, or co-author of each Sectional paper will be allowed a maximum of 18 minutes in which to present a summary of his paper: no attempt should be made to read a paper in full. Authors of Plenary papers will be allowed 40 minutes to present a paper, except in the case of those papers dealing with the efficiency of dairy farming in different countries, when the time allowed will be 30 minutes.
- **Discussions:** A Member who wished to contribute to a discussion must first state clearly his name and country. A limit of 3 minutes will be allowed to

each speaker. Specific questions arising from a paper should whenever possible be submitted in writing to the Chairman before the discussion.

- **Motions:** All motions must be presented in English and confirmed in writing. The time allowed for presenting any motion will be limited to 5 minutes and subsequent discussion of the motion by any speaker must not exceed 3 minutes.
- **Report of Proceedings:** A report of the Proceedings of the Congress will be printed and forwarded to each Full Member who has paid the Membership fee.
- **Reprints of papers presented at the Congress:** will be supplied only on payment. The price to be charged for these reprints will be decided later.
- **Committees:** The Congress, at its Business Meetings, will have power to appoint committees to deal with, or report on, special subjects.
- **Reports from Committees:** The Congress has the duty to accept reports from Committees appointed by earlier Congresses and to ensure that time is made available to discuss these reports at the Business Meetings.

Appendix F-3 Final Business Meeting – 1966

FINAL BUSINESS MEETING OF THE INTERNATIONAL GRASSLAND CONGRESS

The X International Grassland Congress, Helsinki, Finland, 1966

Dr. Steppler (Canada) had chaired a committee appointed to examine the functions of what was then referred to as the Executive Committee of the International Grassland Congress. At the Final Business Meeting, the following report was presented as follows:

Report of the committee appointed to study the functions of the Executive (Continuing) Committee:

Dr. Steppler (Canada) introduced this report section by section. The following recommendations and statements of the committee were approved:

- A. That the name of the continuing organization be changed from *"Executive Committee"* to *"Continuing Committee of the International Grassland Congress"*.
- B. The committee reconfirms the desirability of a permanent secretary and recommends that the Director-General of the F.A.O. be asked to provide a permanent secretary. We request him to be the Chief, Pasture and Fodder Crops Branch.

The permanent secretary: shall serve as the secretary to the Continuing Committee, shall be a non-voting member of the Continuing Committee and shall carry out such duties as are detailed to him by the Continuing Committee.

C. That the duties and responsibilities of the Continuing Committee are to provide continuity for the International Grassland Congress between meetings of the Congress and include the following:

To assist the Organizing Committee of the forthcoming Congress when so requested.

To select the host country for the forthcoming Congress and to announce the name of that host country at the immediate Congress. To maintain and to revise periodically lists of members and of all interested person.

To ensure that resolutions approved at a Congress are passed to the appropriate authorities or acted upon as the resolutions direct.

To conduct any other necessary affairs that require attention between meetings of the Congress.

Limitation of authority: The Continuing Committee shall assume no responsibility – other than advisory – in the organization of the Grassland Congress Meeting once the organizing committee of the host country has been established.

- D. The Continuing Committee shall select and obtain the acceptance of the host country for each Congress. In so doing the Committee shall take cognizance of the sites of previous Congresses and of the major geographic regions of the world. The Continuing Committee shall secure from the proposed host country a firm agreement to act as host to the Congress. It shall announce the country at the Congress immediately preceding e.g. the host country for the XIII Congress shall be announced at the XII Congress.
- E. The members of the Continuing Committee shall consist of the following:

(1) One representative of each of the following geographic areas:

- i. The United States and Canada
- ii. Latin America and the Caribbean
- iii. Australia and New Zealand
- iv. South-east Asia
- v. East Asia
- vi. Mediterranean area and Near East
- vii. Europe (not including vi)
- viii. Africa (not including vi)

Each representative shall serve for the two intervals between three Congresses, with four members elected at each Congress. (2) One representative named at a Congress by the organizing committee of that Congress. This member shall serve until the next Congress. F. The Organizing Committee of the Congress shall appoint a Nominating Committee of five members which shall meet before the opening business meeting of that Congress, and which shall nominate one candidate for each of those geographic areas whose representative is retiring.

The names proposed by the Nominating Committee shall be announced at the opening business meeting, at which time further nominations can be made from the floor.

The President of the Congress shall arrange for an election immediately following the first business meeting.

In the event that a serving member of the Continuing Committee becomes inactive for any reason, the Continuing Committee is empowered to name a successor who shall serve until the next Congress.

- G. That the chairman of the Continuing Committee be elected from its membership by the members of that committee at its first meeting.
- H. That the interval between Congresses be reduced to three years. This is to be interpreted as a guide special circumstances may arise which indicate that a four-year interval is more appropriate.
- I. Suggestions have been received that the name of the International Grassland Congress be changed. Your committee appreciated the thinking behind these suggestions but cannot find a more appropriate name for our Congress.

Appendix F-4 Constitution of International Grassland Congress -1977

CONSTITUTION OF INTERNATIONAL GRASSLAND CONGRESS

(Adopted 1977)

Rule:

(1) Name

International Grassland Congress

(2) Aims and objectives of the Congress

The main aim of the International Grassland Congress shall be to promote interchange of scientific information on all aspects of natural and cultivated grasslands.

For the fulfilment of this aim, an International Grassland Congress shall normally be held every 3 years for the purpose of presenting papers and reports, organizing symposia and conducting pre- and post-Congress tours.³⁶

(3) Membership

Membership of the Congress shall be open to any person interested in grassland studies in any country of the world.

Types of membership:

There shall be three categories of membership.

- (A) Full members (with limited voting right). Official representatives of Governments, grassland scientists and others interested in the study of grasslands. Full members shall be required to pay the registration fee as decided upon by the Congress Organizing Committee. The membership fee of scientists invited by the host country shall be borne by the host country. Full members shall have voting rights as given in Rule (4) (i).
- (B) Day members (without any voting right). Grassland scientists and others who wish to attend only certain Sessions of the Congress. The

³⁶ To evaluate and project newer problems in the direction of grassland amelioration, to evaluate possible boomerangs of chemicalization, improvement of the cattle industry, to quantify and systematize balanced relations between feed and feeding animals and to evaluate methods for training of grassland workers, will be some of the objectives of the Congress.

membership fee of Day members shall be determined by the Congress Organizing Committee.

(C) Associate members (without any voting right). Generally, wives and children of full members. They shall be charged a nominal membership fee.

(4) Voting rights

- (i) For the purpose of adopting resolutions and recommendations, only full members of the Congress shall be entitled to one vote and results shall be determined by the showing of hands.
- (ii) For the purposes of any amendment to the Constitution of the Congress and for deciding the venue of the next Congress, the procedure of the United Nations, namely, one country one vote, shall be followed (definition of country as adopted by United Nations). Where more than one member of a country attends the Congress, the head of the delegation only will have the voting right for the purposes of amendment to the Constitution and for selection of the venue. The names of the head of the delegation of each country shall be submitted to the Chairman of the Continuing Committee before the start of the First Business Meeting. For the purposes of the amendment to the Constitution and for selecting the venue, a secret ballot system shall be followed.

(5) Amendment to the Constitution

Proposed amendments to the Constitution may be made by any full member. They must be sent in writing to the Chairman of the Continuing Committee at least six months before the Congress Session. Details of the proposed amendment shall be announced by the Chairman of the Continuing Committee at the First Business Meeting, and the final decision for adoption or otherwise shall be taken by voting at the Final Business Meeting at the same Congress.

Two thirds of the total votes must be in favour for the amendment to be adopted. Any amendment thus passed shall come in force at the end of the Congress in which it has been adopted.

(6) The Continuing Committee

(A) The members of the Continuing Committee shall consist of one representative from each of the following geographical regions. No

country can be represented on the Continuing Committee for more than two successive terms.

Region I	North America (Canada, United States of America).	
Region II	Central America (Mexico, all Caribbean countries, all Central American countries southwards to include Panama).	
Region III	South America (all countries south of Panama).	
Region IV	South East Asia (Bangla Desh, Burma, Cambodia, India, Indonesia Laos, Malaysia, Northern Himalayan countries, Philippines, Sri Lanka, Thailand, Vietnam).	
Region V	Australasia (Australia, New Zealand).	
Region VI	East Asia (China, Japan, North Korea, South Korea). Region VII Middle East (Afghanistan, Egypt, Iran, Iraq, Jordan, Pakistan, Saudi Arabia, Syria, Turkey, Yemen).	
Region VIII	Mediterranean and Near East (Albania, Algeria, Bulgaria, Greece, Israel, Italy, Libya, Morocco, Portugal, Spain, Yugoslavia).	
Region IX	Europe excluding regions VIII and X (Austria, Belgium, Czechoslovakia, Denmark, Federal Republic of Germany, Finland, France, German Democratic Republic, Iceland, Ireland, Netherlands, Norway, Sweden, Switzerland, UK).	
Region X	Northern Eurasia (Hungary, Mongolia, Poland, Romania, USSR).	
Region XI	Africa excluding regions VII and VIII.	

Congress President or nominee of the host country of the immediately preceding Congress.

(B) The new members of the Continuing Committee shall be nominated from the participating delegates in attendance at the International Grassland Congress, provided they are invitees/full members.

The procedure of election shall be as follows:

 The Chairman of the outgoing Continuing Committee shall, in consultation with the Congress President, appoint a Nominating Committee of five members who shall be senior members of the International Grassland Congress, preferably past Congress Presidents and past Chairmen of the Continuing Committee, who shall nominate one candidate from each geographical region. In selecting the candidate for nomination, the Nominating Committee shall use its own discretion with respect to the qualifications of the nominee regarding his subject and research contribution, etc.

- (ii) The nominations must be in the hands of the Chairman of the Continuing Committee at least one day before the Final Business Meeting.
- (iii) The Chairman shall announce the new members of the Continuing Committee at the Final Business Meeting.
- (iv) The term of office for each member of the Continuing Committee shall not exceed two terms. One term means the period between two Congresses. The terms of office shall be arranged so that five or six members will normally be elected at each Congress. To establish this rotation seven new members will be elected at the XIII Congress of which five will serve until the XV Congress and two to the XIV Congress; the remaining four members will be from the current Continuing Committee who have not served for two terms. At the XIV Congress six members will be elected to serve for two terms.
- (C) Organization of the Continuing Committee
 - (i) The Continuing Committee shall elect from among its members a Chairman. Only those members who have served for one term shall be eligible for Chairman.
 - (ii) For the purpose of electing a new Chairman, the retiring Chairman shall convene a joint meeting of the old and newly elected Continuing Committee members and hold the election either by raising hands, or secret ballot, as he thinks proper. The names should be duly proposed and seconded. This meeting shall be held after the Final Business Meeting.
 - (iii) The newly elected Chairman of the Continuing Committee shall take over from the old Chairman at the same joint meeting of the Continuing Committee. The out-going Chairman shall hand over his office after reviewing the activities of the Continuing Committee during the tenure of his office.

- (iv) The host country of the ensuing Congress shall allocate funds to cover office expenditure incurred by the Chairman. The amount is to be decided by mutual agreement.
- (D) Responsibilities of the Continuing Committee will be to provide continuity to the International Grassland Congress between meetings of the Congress. These include:
 - (i) The Chairman, in consultation with the Continuing Committee, shall advise the Organizing Committee of the Forthcoming Congress regarding programmes and arrangements.
 - (ii) The Chairman shall receive invitations for holding the next International Congress. All invitations from the member countries must be received at least one year before the ensuing Congress. The Chairman shall put the names of the proposed host countries to vote by the members of the Continuing Committee by correspondence. The names will be accompanied by details of the facilities that can be offered by these countries for holding the Congress. If one country receives 2/3 of the votes, i.e., eight out of the twelve, the country will be elected as the host for the next Congress. In that case, the Chairman of the Continuing Committee shall declare the result at the First Business Meeting for the information of the Congress. If no country receives a clear 2/3majority, the Chairman shall put the names of the two countries receiving the highest number of votes before the Final Business Meeting for voting according to the Rule (4) (ii) using secret ballot papers which will be issued to the voting members by the Chairman of the Continuing Committee.
 - (iii) The Chairman shall maintain a list of members of at least the past two Congresses and of interested persons whom the host country should send the first circular regarding the forthcoming Congress.
 - (iv) The Continuing Committee, through its Chairman, shall ensure that action is taken on all the resolutions adopted at the past Congress.
 - (v) Conduct of any other necessary affairs that require attention between meetings of the Congress including making alternate arrangements if the invited country is unable to proceed with the Congress. He shall then invite the country obtaining the next highest votes.

- (E) Duties of the Chairman of the Continuing Committee at the Congress Session.
 - (i) He shall preside over the First Business Meeting at the next Congress.
 - (ii) He shall form a Nominating Committee as in Rule (6) (B) (i).
 - (iii) He shall convene and conduct the joint meeting of the Continuing Committee after the Final Business Meeting for the purpose of electing the new Chairman and for handing over the charge.
 - (iv) He shall announce the venue for holding the next Congress or hold an election for the purpose as prescribed in Rule (6) (D) (ii).
 - (v) He shall present his address at the Inaugural Session.

(7) Congress President

- (i) The host country shall have full right to name the Congress President.
- (ii) The duties of the Congress President shall include chairing the inaugural function, Plenary Sessions and the Final Business Meeting. He shall be completely responsible for the organization of the Congress.
- (iii) The Congress President shall become an ex-officio member of the Continuing Committee for one term. Alternatively, he may nominate an exofficio member to represent his country on the Continuing Committee.

(8) Congress Sessions

Every Congress shall start with an Inaugural Session presided over by the Congress President. No business shall be transacted at the Session. The details of the inaugural function shall be the responsibility of the host country.

Preferably on the same day, before starting Plenary Sessions, the First Business Meeting shall be held presided over by the Chairman of the Continuing Committee. Details of this meeting shall be worked out by the Chairman in consultation with the Congress President. Any amendment to the Constitution of the Congress and recommendations shall be put by the proposer or his nominee for consideration. These shall be accepted or rejected only at the Final Business Meeting. The method of voting prescribed in Rule (4) shall be followed. The time for presenting an amendment or recommendation should not be more than 5 minutes.

(9) The Proceedings of the Congress

Shall be printed and published by the host country and forwarded to all the full members. Likewise, the host country shall be responsible for inviting the contributions to the Congress and printing them in the form of pre-Congress documents.

(10) The host country

- (i) Once a country has been invited and has accepted to act as host to a Congress, it shall have complete responsibility for deciding the precise venue, programme, number of participants, etc., but the organizers shall be free to seek advice, if they so wish, from other countries, and the Continuing Committee.
- (ii) At the completion of a Congress, the Secretariat of that Congress should hand on as much information as possible to the organizers of the next Congress.

This should include:

- (a) The complete mailing list used by the outgoing Secretariat.
- (b) A full list of members of the immediate past Congress, associate members, etc.
- (c) The list of reply cards including the names of the workers who were unable to attend the Congress.
- (d) Samples of all relevant forms, tickets, programmes, account forms, membership badges, etc.
- (e) Details of all resolutions minuted to the next Congress.

Appendix F-5 Revised Constitution – 2001

CONSTITUTION OF THE INTERNATIONAL GRASSLAND CONGRESS (Revised 2001)

(1) Name

International Grassland Congress

(2) Aims and objectives of the Congress

The main aim of the International Grassland Congress shall be to promote interchange of information on all aspects of natural and cultivated grasslands and forage crops for the benefit of mankind, including sustained development, food production and the maintenance of biodiversity.

An International Grassland Congress shall normally be held every 4 years, with the presentation and discussion of papers and reports and other activities including the conduct of tours to fulfil the aims of the Congress.

(3) Membership

Membership of the Congress shall be open to any person interested in grassland studies in any country of the world.

Types of membership:

There shall be three categories of membership.

- (a) Full members (with limited voting right). Official representatives of Governments, grassland scientists, farmers and others interested in the study and use of grasslands. Full members shall be required to pay the registration fee as decided upon by the Congress Organizing Committee. Full members shall have voting rights as given in Rule (4) (i).
- (b) Day members (without any voting right). Grassland scientists and others who wish to attend only certain Sessions of the Congress. The membership fee of Day members shall be determined by the Congress Organizing Committee.
- (c) Associate members (without any voting right).Generally accompanying persons and children of full members. They shall be charged a membership fee determined by the Congress Organizing Committee.

(4) Voting rights

- (i) For the purpose of adopting resolutions and recommendations, each full member of the Congress shall be entitled to one vote.
- (ii) For the purposes of any amendment to the Constitution of the Congress the procedure of the United Nations, namely, one country one vote, shall be followed (definition of country as adopted by United Nations). Where more than one member of a country attends the Congress, the head of the delegation only will have the voting right. The names of the head of the delegation of each country shall be submitted to the Chairperson of the Continuing Committee before the start of the Final Business Meeting. A secret ballot system shall be followed.

(5) Amendment to the Constitution

Proposed amendments to the Constitution may be made by any full member. They must be sent in writing to the Chairperson of the Continuing Committee at least six months before the date set for the opening of the ensuing Congress. Details of the proposed amendment shall be announced by the Chairperson of the Continuing Committee at the Business Meeting held on the first day of the Congress and the final decision for adoption or otherwise shall be taken by voting of heads of delegations at the Final Business Meeting at the same Congress.

Two thirds of the total votes (including abstentions) must be in favour for the amendment to be adopted. Any amendment thus passed shall come in force at the end of the Congress in which it has been adopted.

(6) The Continuing Committee

(a) The members of the Continuing Committee shall consist of one representative from each of the geographical regions illustrated below and map (<u>page 322</u>). Each representative will serve for two terms, where one term means the period between two Congresses. No country can have a regional representative on the Continuing Committee for more than two terms except in exceptional circumstances.

Region I	North America
Region II	Central America and Caribbean
Region III	South America

Region IV	South Asia
Region V	Oceania
Region VI	East Asia
Region VII	Middle East
Region VIII	Mediterranean
Region IX	Europe excluding regions VIII and X
Region X	North Eurasia
Region XI	Africa excluding region VIII

Congress President or nominee of the host country of the immediately preceding Congress (this individual is appointed for one term only and does not have voting rights).

- (b) The new members of the Continuing Committee shall be nominated from the participating delegates in attendance at the International Grassland Congress. *The procedure for election shall be as follows:*
- (i) The Chairperson of the outgoing Continuing Committee shall, in consultation with the Congress President, appoint a Nominating Committee of five members who shall be senior members of the International Grassland Congress, preferably past Congress Presidents and past Chairpersons of the Continuing Committee, who shall nominate one candidate from each geographical region, after consultation with members from those regions.
- (ii) The nominations must be in the hands of the Chairperson of the Continuing Committee at least 24 hours before the Final Business Meeting.
- (iii) The Chairperson shall announce the new members of the Continuing Committee at the Final Business Meeting.
- (iv) The terms of office shall be arranged so that five or six members will normally be elected at each Congress.
- (c) Organization of the Continuing Committee
- (i) The Continuing Committee shall elect from among its members a Chairperson, who will serve for one term. Only those members who have served for one term shall be eligible for Chairperson.

- (ii) For the purpose of electing a new Chairperson, the retiring Chairperson shall convene
 a joint meeting of the old and newly elected Continuing Committee members after the
 Final Business Meeting and hold the election either by raising hands or secret ballot.
 The names should be duly proposed and seconded and the person with the most votes
 will be elected.
- (iii) The newly elected Chairperson of the Continuing Committee shall take over from the old Chairperson at the same joint meeting of the Continuing Committee.
- (iv) The host country of the ensuing Congress shall allocate funds to cover expenditure on necessary discussions and office arrangements incurred by the Chairperson.
- (d) *Responsibilities of the Continuing Committee* will be to provide continuity to the International Grassland Congress between meetings of the Congress. These include:
- (i) The Chairperson, in consultation with the Continuing Committee, shall advise the Organizing Committee of the forthcoming Congress regarding programmes and arrangements.
- (ii) The Chairperson shall receive invitations for holding the next International Congress. All invitations must be received at least one year before the date set for the opening of the ensuing Congress. The Chairperson shall put the names of the proposed host countries to vote by the members of the Continuing Committee by correspondence. The names will be accompanied by details of the facilities that can be offered by these countries for holding the Congress and their plans for the Congress. The venue will be determined by a simple majority of votes received by the Chairperson by the declared closing date. A preferential voting system (single transferable vote) will be used. The Chairperson of the Continuing Committee shall declare the result at the First Business Meeting for the information of the Congress.
- (iii) The Continuing Committee shall appoint such sub-committees (e.g. Resolutions Committee) as it considers appropriate to conduct its business.
- (iv) The Chairperson shall maintain a list of members of at least the past two Congresses and of interested persons to whom the host country should send the first circular regarding the forthcoming Congress.
- (v) The Continuing Committee, through its Chairperson, shall ensure that action is taken on all the resolutions adopted at the past Congress.
- (vi) The Continuing Committee shall conduct any other necessary affairs that require attention between meetings of the Congress including making alternate

arrangements if the invited country is unable to proceed with the Congress. The Chairperson shall then invite the country obtaining the next highest votes.

(vii) The Chairperson of the Continuing Committee will preside over the Business Meetings of the Congress.

(7) Congress President

- (i) The host country shall have full right to name the Congress President.
- (ii) The Congress President shall be completely responsible for the organization of the Congress.
- (iii) The Congress President shall become a member of the Continuing Committee for one term following his Presidency. Alternatively, the President may nominate a member from his/her country to represent the previous Congress on the Continuing Committee.

(8) The host country

- (i) Once a country has been invited and has accepted to act as host to a Congress, it shall have responsibility for deciding the precise venue, programme, number of participants, etc., and for the finances of the Congress, but the organizers are required to keep the Chairman of the Continuing Committee informed of progress.
- (ii) The host country is required to ensure that the Proceedings of the Congress are published within 12 months of the conclusion of the Congress and made available to all full members and to others wishing to access the Proceedings. The minimum publication of contributed papers should be a one-page abstract.
- (iii) At the completion of a Congress, the Secretariat of that Congress should hand on as much information as possible to the organizers of the next Congress. This should include:
- (a) The complete mailing list used by the outgoing Secretariat.
- (b) A full list of members of the immediate past Congress, associate members, etc.
- (c) Samples of all relevant forms, membership badges, etc.
- (d) Details of all resolutions minuted to the next Congress.

Regions of the World as Delineated by the International Grassland Congress in 2001



Region I: North America	Region VII
Region II: Central America and Caribbean	Region VII
Region III: South America	Region IX: Regions
Region IV: South Asia	Region X: I
Region V: Oceania	Region XI: excludir
Region VI: East Asia	

Region VII: Middle East

Region VIII: Mediterranean

Region IX: Europe excluding Regions VIII and X

Region X: North Eurasia

Region XI: Africa excluding Region VIII

Appendix G Congress Themes

Themes from the International Grassland Congresses

Inaugural Congress through the XI Congress

No Congress Themes have been identified.

- XII Moscow, USSR 1974 Soil-Plant-Animal-Products of Livestock Breeding
- XIII Leipzig, Germany GDR 1977 50 Years Grassland Research for Intensive Forage Production
- XIV Lexington, Kentucky United States 1981 To Strengthen the Forage-Livestock Systems of the World
- XV Kyoto, Japan 1985 Advances in Grassland Science for the Betterment of All Mankind

XVI Nice, France 1989

Diversity in Grassland Production: Evaluation, Adaptation, Utilization and Appreciation

- XVII Palmerston North, New Zealand/Rockhampton, Australia 1993 Grasslands for Our World
- XVIII Winnipeg and Saskatoon, Canada 1997 Grasslands 2000
- XIX Sāo Pedro, Sāo Paulo, Brazil 2001 Grassland Ecosystems: An Outlook into the 21st Century
- XX Dublin, Ireland 2005

Grassland: A Global Resource

XXI IGC- VIII IRC Hohhot, China 2008 Multifunctional Grasslands in a Changing World

XXII Sydney, Australia 2013

Revitalizing Grasslands to Sustain our Communities

XXIII New Delhi, India 2015

Sustainable Use of Grassland Resources for Forage Production, Biodiversity and Environmental Protection

XXIV IGC – XI IRC Nairobi, Kenya 2021

Sustainable Use of Grassland/Rangeland Resources for Improved Livelihoods

Appendix H The Leipzig Glossary of Terms

Glossary: Grassland, Forage Production, Animal Nutrition XIII International Grassland Congress, Leipzig, GDR 1977



Appendix I The Kyoto Appeal

IGC KYOTO APPEAL 1985

(Members of the 15th International Grassland Congress, 1985³⁷)

In the name of the 15th International Grassland Congress

The members of the XV International Grassland Congress, who comprise 928 research workers and experts in grassland science from 49 countries of the five continents of the world, and who are met in Kyoto, Japan, to discuss recent research findings and the future orientation of grassland farming,

1. Note:

- i) the increasing world demand for food and fibre derived from animals utilizing grassland;
- ii) the close integration of crop and animal production in farming systems of many countries, and the need for grassland to stabilize cropping systems, especially on marginal lands;
- iii) the pressure on grassland resources leading to environmental degradation;
- iv) the possibility of improving grass and forage utilization by fractionation and the direct production of human food and other products;
- v) the opportunities for the application of science to improve the production, utilization and stability of grassland,
- 2. Urge governments and institutions such as the Food and Agriculture Organization of the United Nations, the International Board for Plant Genetic Resources and the Consultative Group for International Agricultural Research to allocate resources to grassland science, which will facilitate the development of:
 - i) inventories of grassland resources as a basis for agricultural and environmental policies regarding land use;
 - ii) long term institutional support for grassland research and education directed to understanding the farm situation, defining and developing grassland ecosystems, and removing the constraints to the performance and utilization of pasture plants;
 - iii) incentives for the extension and improvement of grassland farming systems which are appropriate to the goals of resource conservation and development, the well-being of rural communities, and the satisfaction of consumer demand for products of grassland.

³⁷ NOTE: Use of 15th is in the original document as well as the change to XV in the first paragraph.

Appendix J The French Resolution

Resolution Number 1 from the XVI International Grassland Congress

Nice, France - 1989

Presented by Dr. Bob Clements (Australia), Chairman of the Resolutions Committee.

Whereas, there is a continuing need for scientific and educational communication among grassland research and organizations world-wide; and,

Whereas a resolution adopted at the XII International Grassland Congress, Moscow, USSR, 20 June, 1974, recommended a study of the advisability of founding an International Grassland Organization; and,

Whereas, a statement was made at the XIII International Grassland Congress, Leipzig, GDR, 27 May, 1977, in the context of the previous resolution, that there were many considerations and aspects which did not favor setting up such an Organization at that time, but that grassland organizations should be established at national levels; and,

Whereas, with the initiation of the first International Rangeland Congress in 1978, which emphasized the extensive arid and semi-arid rangelands of the world, there became a need for establishing communication and coordination between the Continuing Committees of the two Congresses: and,

Whereas, at the XIV International Grassland Congress, Lexington, Kentucky, USA, 24 June 1981, a further resolution was adopted to consider the desirability of reconstituting the International Grassland Congress to consist of a Central Governing Body of similar constitution to the Continuing Committee but having responsibility for the formation and coordination of a number of chapters representing and taking responsibility for smaller international meetings embracing the different climatic and topographical regions of the world; and,

Whereas, although no formal activity had been initiated by the time of the XV International Grassland Congress, Kyoto, Japan, in 1985, a further emphasis was

placed on the need to expand and update communication among grassland organizations of the world: and,

Whereas, there is a need for a mechanism to enable grassland scientists to speak as one body on problems of world-wide significance, and to promote the importance of grassland science in ecosystem conservation and utilization; and,

Whereas, there is a need to improve the technical capability of scientists and scientific organization in the developing world;

Therefore, it is resolved that the Continuing Committee establish a working group to study and explore the feasibility of establishing an international organization to provide improved communication, cooperation and coordination of activities in science and technology associated with forage, grassland, and rangeland resources.

Appendix K Pros and Cons of a Joint IGC/IRC Meeting

As interest grew in the possibility of a joint meeting between the International Grassland Congress and the International Rangeland Congress, following XVIII Congress in Canada, Bob Clements (Chair, IGC Continuing Committee) and Margaret Friedel (Chair, IRC Continuing Committee) met and discussed the feasibility of such a meeting. Working together, they developed the following discussion paper presenting the pros and cons of such a meeting. This was circulated to all members of the Continuing Committees of both Congresses as well as to numerous senior members of the international grassland research community, and to many rangeland and grassland organizations. The discussion paper follows:

CLOSER COORDINATION OF THE INTERNATIONAL GRASSLAND CONGRESS AND THE INTERNATIONAL RANGELAND CONGRESS

BACKGROUND

The International Rangeland Congress (IRC) split off from the International Grassland Congress (IGC) in the mid 1970's, at a time when the IGC appeared to rangeland scientists to be excessively focused upon plant and animal production issues. Rangeland scientists believed that the IGC did not pay sufficient attention to issues of resource conservation and to the underpinning scientific disciplines, particularly rangeland ecology.

Since that time, there have been significant changes in the views of both grassland and rangeland researchers, and there appears to be a groundswell of opinion, particularly among younger scientists, that closer coordination of the two Congresses may be both desirable and inevitable. The IGC in recent years has introduced new sessions on biodiversity, climate change, semi-arid and montane grasslands, soil processes, system modeling (including applications of GIS and other information technologies), the impact of trade and other agricultural policies on grasslands, and extension of grassland technologies. Also, the IGC has made a special effort to embrace researchers from developing countries. The IRC has, from its inception, included sessions devoted to developing countries and to social, political and economic aspects of rangelands, as well as dealing with ecology and management of rangeland environments and grazing animals, and technical applications. Over time, the IRC has incorporated new themes such as non-grazing uses, biodiversity, education and training and global change, reflecting the changing pressures on the world's environments and peoples, recognized also by the IGC. It is not yet clear how closer coordination of the two Congresses could best be achieved. The options range from improved communication between members of each Congress, to amalgamation of the IGC and the IRC to form a new, single Congress. A middle course which is being considered is to hold a shared (joint) Congress at some future time, perhaps 2003. The purpose of this brief discussion paper is to set out arguments for and against a shared Congress in 2003, with a view to ongoing closer coordination of the Congresses.

ARGUMENTS IN FAVOUR OF A SHARED CONGRESS

- There is a significant overlap in the coverage of the two Congresses. The IGC in particular has moved to embrace the focus of the IRC, and there is now a strong awareness among grassland researchers of the importance of resource conservation. This is reflected in the IGC program.
- There is a shared need to promote the broader agenda for both grassland and rangelands, i.e. the role of grasslands and rangelands in the broader biome. This is clearly reflected in the themes of the forthcoming 6th IRC ("People and Rangelands: Building the Future") and 19th IGC ("Grassland Ecosystems. An Outlook into the 21st Century"). The agenda is now broader for both Congresses. The world has changed.
- There is a need to work together in order to influence governments, industry, policy makers and donors to support research on both rangelands and grasslands.
- As part of this promotional activity, there is a need to package and market the activities of rangeland and grassland researchers in an integrated manner. We certainly cannot afford a situation in which grassland and rangeland researchers each promote their achievements and activities at the expense of the other.
- There is a likelihood that it will become increasingly difficult to obtain funds to host Congresses of the size and complexity now required. Already it is difficult for developing countries to host a Congress, and already many researchers much choose which Congress to attend, because they cannot obtain funds to attend both the IGC and the IRC. A single, shared Congress would be in a stronger position to obtain
scarce funds than either of the two current organizations working independently.

ARGUMENTS AGAINST A SHARED CONGRESS

- The particular needs and interests of rangeland researchers may be diluted or lost in a shared Congress with a much broader agenda. The desirable characteristics of the IRC would need to be protected, and there would need to be ongoing attention to resource conservation issues.
- There is a risk that polarization of grassland and rangeland researchers might actually be increased if the sessions were programmed to run entirely concurrently and participants were forced to choose between either a rangeland or a grasslands stream.
- A shared Congress which required appropriate mid-Congress tours would disadvantage some potential host countries that were unable to provide suitable mid-Congress opportunities for delegates to view both grasslands and rangelands. This might actually reduce the number of potential host countries.
- A shared Congress would inevitably have a broader program, and some researchers working in highly specialized disciplines would find this unattractive and might not attend. By trying to cover the interests of everybody, the Congress might end up suiting nobody.

Bob Clements (Chair, Continuing Committee, International Grassland Congress) Margaret Friedel (Chair, Continuing Committee, International Rangeland Congress 12 December, 1997

Appendix L Financing the Congress

Gathering people from afar to attend a meeting or a conference requires financial support. The International Grassland Congress has been no exception to this although needs, strategies, opportunities, and objectives have varied over the years.

For the Inaugural Meeting in Leipzig, Germany, in 1927, we know little of this although delegates certainly had travel and lodging expenses. Perhaps they were provided with some food functions, and we know of at least one, but there was train travel and other travel during their 'excursions.' In Falke's letter to Richard Geith, he refers to the "organizational effort and hospitality" provided as well as "a complete report" of the first meeting. Delegates were also provided with a "small booklet" about: *Studies of Agriculture at the University of Leipzig*. We can assume there were some costs involved and can guess at ways they may have covered their expenses.

The Second Meeting followed much the same format as the first but included more delegates from additional countries. The second meeting also included travel to several sites during the meeting. It is likely safe to assume that there were several sources of support for these meetings.

It was the Third Meeting where the name changed to International Grassland Congress Association with the Association established as the sponsoring organization for successive Congresses. Leipzig became the permanent seat for the Association's central office. The Association was formed for the "purpose of facilitating the exchange of scientific and practical experience in grassland management." It was here that the *Statutes of the Association* (Appendix E) were written, giving us insight into the funding of the Congress.

Article II that deals with Membership tells us the following about classes of members and their "subscription" rates:

Ordinary Members – 'Individuals who are considered experienced representatives of grassland science in the countries comprising the Congress area, and who, admitted either as individuals or as representatives of scientific and agricultural bodies, are prepared to co-operate in carrying through the work of the Congress. In addition, there may also be admitted as ordinary members individuals not residing in the Congress area, insofar as they play a scientific or practical part in grassland management.'

<u>Annual Subscription Rate</u>: As a rule is RM 10 (German Reichsmarks) or the value of this sum in gold, reckoned at the date of the Association's foundation.

Extraordinary Members - associations, corporations, and commercial enterprises in the Congress area which are endeavoring to promote grassland farming in a scientific or practical manner.

<u>Annual Subscription Rate:</u> Must pay an annual subscription, the amount of which is left to their discretion; in the case of corporate members, however, it must not be less than RM 50 (German Reichsmarks). A donation of RM 1000 purchases an extraordinary membership of the Congress for life for corporations, associations and commercial enterprises situated in the Congress area.

Honorary Members: those persons who have rendered special service to the Congress or its objects may be nominated as honorary members.

Honorary Members pay no subscription.

Promoters - associations, corporations, and commercial enterprises.

A donation of not less than RM 1000 (German Reichsmarks) is made to the Congress.

Friends - all those who support the Congress by regular subscriptions.

All members' subscriptions are to be paid direct to the central office or to a trustee nominated by the executive body. The general assembly may increase or reduce this amount, their decision to hold good until the next general assembly.

At the Fourth Congress, Dr. Geith tells us that "Provision for carrying on the work has been made possible through the generosity and contributions of the members of the International Grassland Congress Association up to the present. For this reason, a modification of the Congress fees was obtained for them in the present instance, and the Central Office in Leipzig was further enabled to contribute a sum of £70 towards the printing expenses of the Congress by purchasing a large number of its publications. The lightening of the heavy work incurred in the preparation and financing of the Congresses by the countries entertaining them will continue to be regarded as a duty by the Central Office. It is not alone the exchange of literature, which will be of importance in the future, but also the interchange of experience through personal visits, where in the Central Office I prepared to afford the members of the Association every assistance" (Geith, 1937).

Dr. Van Daalen (Holland) tells us that the Association's accounts are in "perfect order and that he has no objection to leaving these funds banked in Germany." Unfortunately, with the outbreak of the Second World War, these funds (about 1780 German Reichsmarks) were lost. Thus, at the Fifth Congress in the Netherlands after the war, the Congress functioned without the help of the Association and the Association was disbanded. At the Sixth Congress in 1952, Rules of Procedure (<u>Appendix F-1</u>) were adopted and in Article 13, we learn that the registration fee for those official delegates and members not desiring to obtain copies of the published Proceedings was ten dollars (10.00 US\$). If a copy of the published Proceedings was desired, the fee was fifteen dollars (15.00 US\$). The registration fee for associates was five dollars (5.00 US\$). Even at the value of the dollar in 1952, this would not have been sufficient income to cover the expenses of the Congress. Other income sources were obviously needed.

Rules of Procedure in 1966 at the Ninth Congress do not provide information on the amount of fees but state that each Full Member who has paid the Membership fee will receive a copy of the published Proceedings of the Congress.

When the first Constitution was written and accepted in 1977 at the XIII Congress in Leipzig, no statement of fees was included but this Constitution does state that the published Proceedings "shall be printed and published by the host country and forwarded to all the full members. Likewise, the host country shall be responsible for inviting the contributions to the Congress and printing them in the form of pre-Congress documents."

Also, in this first Constitution, in Section 6 (C) iv, it states that "The host country of the ensuing Congress shall allocate funds to cover office expenditure incurred by the [Continuing Committee] Chairman. The amount is to be decided by mutual agreement."

When the current Constitution was accepted in 2001, three categories of Membership were described as Full members, Day members, and Associate members (who would be charged a fee determined by the Congress Organizing Committee).

Section 6 (C) iv again states "The host country of the ensuing Congress shall allocate funds to cover expenditure on necessary discussions and office arrangements incurred by the [Continuing Committee] Chairperson."

Thus, through most if not all of these years, each Congress was responsible for setting the fees and finding financial support to cover all their costs. After the Association was disbanded in 1949, no mechanism was in place to handle either deficits or excess funds generated by these Congresses. However, following the XIV Congress in Kentucky (USA), funds raised were in excess of expenses such that it allowed creation of the Forage and Grassland Foundation which functions as an independent entity. Since then, these monies have supported numerous objectives for the International Grassland Congress (*The Forage and Grassland Foundation*, page 57).

Increasingly, discussions have expressed interest in other possible needs of support including the following:

- A source of 'seed money' or a 'short-term loan' to help the initial process of organizing and developing the next Congress.
- A Business Management Office for financial management and development and maintenance of a permanent IGC website.
- As discussed at numerous congresses, the need for a permanent Secretariat.
- Expenses incurred by the Continuing Committee and to allow the Chair to carry out travel essential to the Committees work beyond that envisioned by the language in the Constitution.
- Ensuring that members of the Continuing Committee can attend each Congress to carry out the business of the Committee.
- Travel and participation from scientists from third-world countries.
- Enabling young scientists from around the world to participate in these Congresses.

At the XVIII Congress in Canada in 1997, a Resolution was put forth regarding Seed Money for each following Congress. **Resolution 3**. Seed Money, stated:

It would be desirable that the Organizing Committee of a Congress make available a short-term loan to the incoming Organizing Committee for the purpose of initiating the early business activities of the next Congress [Seconded by Lloyd Davies (Australia)].

The Resolution was defeated.

At the XX Congress in Dublin, Ireland, the Continuing Committee explored the possibility of working with Dr. Ellen Bergfeld, Executive Vice President of the Tri-Societies in Madison, Wisconsin, USA, to use their services for Business Management for the International Grassland Congress. This would include development of a permanent website for the Congress. The IGC had not had a permanent Secretary or Business Office since the Fourth Congress in 1937. This was done through Dr. Bergfeld and initially the American Society of Agronomy. Funds (\notin 1,000) that were granted from surpluses of the Ireland Congress were held in this account. This later moved to the Crop Science Society of America (CSSA) and then to the Agronomic Science Foundation of the Tri-Societies.

With the decision to work with the IRC for a shared Congress in China in 2008, there was a need to have both congresses follow the same approach regarding registration fees. It had been the policy of the IRC to charge an additional 10 US\$ per registration and to retain this money to provide the needed 'seed money' for the startup of the

following Congress. Thus, the IGC followed this same strategy. The 10 US\$ levy on fully registered IGC delegates at the joint IGC-IRC 2008 meeting was also lodged in the account with Dr. Bergfeld and CSSA. This policy was continued at both the XXII and the XXIII Congresses.

At the XXIII Congress in India in 2015, **Resolution 5** stated: Ten dollars US\$ per attendee earned during the congress (starting IGC XXIV) should be provided to the IGC Continuing Committee to be startup funds for the next congress and to support early career researchers attending the congress. The motion was carried unanimously. This action has been implemented for the XXIV Congress in Nairobi, Kenya, for 2021 and will be carried forward as operating procedure.

Regardless of strategies to provide funds for this and other specific initiatives, the responsibility for funding a particular Congress lies with its hosts. This is a major undertaking, as illustrated by the budget for the Sydney component of the XXII Congress in 2013 being 1.3 m US\$ (Bob Clements, Personal Communication). This expenditure needs to be covered by delegate fees and by sponsorship. In this case, sponsorship amounted to 0.56 m US\$, nearly half of the budget. This contribution coming from sponsorship is not unusual for Congresses held in recent decades, and for the overall XVII Congress in New Zealand and Australia, sponsorship contributed about 72% of the budget (Brougham, 1993a). Sponsorship has made an enormous contribution to the viability of Congresses by enabling registration fees to be held at much lower levels than would otherwise have been the case, thus, facilitating high levels of participation.

Sponsorship has come from many public and private organizations and charities. Support has been given in cash and in kind. Support in cash has often been targeted. For instance, for the XVII Congress in New Zealand and Australia 1993, a large effort was made to obtain funds to support delegates from developing countries. This was successful: "more than 400 delegates were from developing countries. Many were partially or fully supported financially."

In addition to cash sponsorship, organizations have covered many specific items such as the provision of receptions and entertainments that have added much to facilitating relaxed interactions among Congress delegates. A further key area of support has been the preparedness of organizations involved in hosting Congresses to allow members of their staff to spend their time in planning and organizing the Congress without any charge. This would have amounted to many hundreds of person hours for each Congress. Without that support, Congresses, such as the IGC we have known, would not have been able to be held.

In 2019, the business management of the International Grassland Congress was moved to the American Forage and Grassland Council in Kentucky, USA, where it will

remain at least through the XXV Congress in 2023 when the venue is in Kentucky. This also includes the current maintenance of the website. Thus, steps have been taken over the past 15 years to put financial management of our Congress on a sounder footing. It remains to be seen where this will lead us in the future, but it opens up opportunities to accomplish an increasing number of objectives put forth by the International Grassland Congress.

Appendix M Steps Forward

The International Grassland Congress Website

Until the XX Congress in Ireland in 2005, the IGC itself had never had a website. Congresses worked from one to the next with each developing its own means of communication that had begun to include a website for informing delegates of the upcoming Congress. There was no good way to carry forward information or to archive historical information to make it widely available. The growing need for a Congress website was discussed within the Continuing Committee and action was recommended. Vivien Allen, Chair of the Continuing Committee (2001 to 2005), met with Ellen Bergfeld, CEO of the Tri-Societies [(American Society of Agronomy (ASA), Crop Science Society of American (CSSA), and Soil Science Society of America (SSSA)] in Madison, Wisconsin, United States. Discussions for hosting such a website appeared promising. During the Congress in Ireland, the following resolution was formulated and presented at the Business Meeting.

XX Congress in Ireland: Resolution 4

The members ask that the Continuing Committee consider establishing a permanent website to facilitate links between grassland and rangeland scientists from across the globe; to house IGC archives, and to provide a link to current and future IGC websites specific to each venue. (Motion carried unanimously).

After the Congress in Ireland, "Guy Allard made a first contact with Ellen Bergfeld to evaluate the possibility for ASA to build and host a website for IGC. Ellen and ASA were very helpful" (G. Allard, Personal Communication). The American Society of Agronomy agreed to put the website together, to host it, and to update it regularly on an upcoming events page.

The website was launched in 2006 through the Tri-Societies. At the request of Gavin Sheath (Continuing Committee Chair 2005 to 2008), Professor Guy Allard (Continuing Committee member – Canada) and Dr. Raul Vera (Continuing Committee member – Chile) assumed responsibilities for putting this first website together. In 2006, Guy and Raul surveyed members of the Continuing Committee to determine objectives for the website. Based on results, the following pages were to be included.

- Congress information including the Constitution, the history, and members of the Continuing Committee
- Announcements regarding next Venue

- Minutes and Proceedings of previous Congresses
- Links to other grassland or forage interest websites including links to upcoming meetings or events
- Contact person (Current chair of the Continuing Committee and/or the representative from Canada-USA), because the website was hosted in the USA
- The most difficult aspect attempted was to put together a page where forage researchers in the world could post their financed research projects for which they sought international colleagues. This was a hard task requiring an interactive page and few projects were posted. This section was discontinued after about 2 years. Later, for reasons of maintenance and keeping the site up to date, the section on upcoming events or meetings was also taken out. (From Guy Allard, Personal Communication).

"Throughout the years, Ellen was always the contact person between ASA and me (Guy Allard) and more specifically regarding the building of the website and its maintenance, two persons were involved: Johanna Cherry and after that Ian Popkewitz" (Guy Allard, Canada, Personal Communication).

Further Resolutions concerning the website were passed at the XXI Congress in China (2008) and at the XXII Congress in Australia (2013) as follows:

Minutes of the Business Sessions at the XXI International Grassland Congress Hohhot, Inner Mongolia, China, 2008

Resolution 4 asked that a permanent IGC website be established. Such a site was launched in 2006 and has been overseen by Professor Guy Allard (Continuing Committee member – Canada). The efforts of Guy and Dr Raul Vera (Continuing Committee member – Chile) in establishing the site must be acknowledged. The Crop Science Society of America has provided the technical service for this website. (Carried: Unanimously)

Minutes of the Business Sessions at the XXII International Grassland Congress Sydney, New South Wales, Australia

Resolution 5 – That the plenary presentations of future Conferences be recorded for wider distributions through the IGC website or simultaneous delivery. (Carried Unanimously.)

In June of 2009, the website moved to The Crop Science Society of America (CSSA) in Madison, Wisconsin. Crop Science Society of America provided the funding and technical service and maintained the website until 2019. In 2015, the upkeep of the website was transferred from Guy Allard to Ray Smith (Continuing Committee Chair, 2015 to 2021).

From 2006 to 2019, the Tri-Societies in Madison, Wisconsin, served as host for the IGC Website, providing its original creation and continuing maintenance, at no cost to the IGC. Their help, professionalism, and generosity are gratefully acknowledged.

In June of 2019, the IGC Continuing Committee approved moving the website management to the American Forage and Grassland Council (AFGC). The AFGC website team is currently updating and enhancing the website and the site is now online (2020). The logistics of website transition from one Congress to the next should be made easier by this change.

A Logo for the International Grassland Congress

Until about 2000, the IGC had no consistent visual identification that could be



repeatedly associated with the Congress. Each Congress was unique, and each designed its own visual representation for that particular congress. While it was the desire to support the individual creativity that best portrayed each Congress, there was also a need for something other than just the name of the Congress to

The Logo of the International Grassland Congress

provide for overall identity and that would be consistent across all Congresses and on communications sent out by the IGC. The Congress needed a logo.

Thus, a logo, designed by Mr. C. Philip Brown (Texas Tech University, Lubbock), was presented to the Continuing Committee meeting during the XX IGC in Ireland. Approval was given for its use. It has been used since then to the present time.

Stationery representing the International Grassland Congress was also designed to be used for all official correspondence, both written and electronic. With each new Continuing Committee, the names, locations, and e-mail addresses for each member of the Continuing Committee would be updated. Name:

Chair, IGC Continuing Committee

Address:

Email:



Region 1 (Canada, USA) Name: Email: Country:	(Date)
Region 2 (Central America) Name: Email: Country:	
Region 3 (South America) Name: Email: Country	
Region 4 (South East Asia) Name: Email: Country:	
Region 5 (Australia, New Zealand) Name: Email: Country:	
Region 6 (East Asia) Name: Email: Country:	
Region 7 (Middle East) Name: Email: Country:	
Region 8 (Mediterranean, Near East) Name: Email:	
Region 9 (Europe) Name: Email:	
Country: Region 10 (Northern Eurasia) Name: Email:	
Country: Region 11 (Africa) Name: Email:	
Country: Representative of previous host country Name: Email:	
Country:	

As collaboration between the International Grassland Congress and the International



The symbol of collaboration between the International Grassland Congress and the International Rangeland Congress in the development of An International Terminology for Grazing Lands and Grazing Animals.

Rangeland Congress began to evolve, there also needed to be a visual symbol of this collaboration. In July, 1999, at the VI IRC in Townsville, Oueensland, Australia, agreement was reached between the two congresses to jointly take on the revision updating of the and publication Terminology for Grazing Lands and Grazing Animals. This was to be the first truly collaborative effort between the two Congresses. As a first step, membership of a Terminology Task Force was appointed jointly by Bob Clements (Australia) and

Maureen Wolfson, (South Africa), (Chairs, respectively of the IGC and the IRC Continuing Committees). Letters of invitation to participate on the committee were sent out jointly, by Clements and Wolfson, to prospective members on 24 November, 2000.

At this point, there was no symbol that indicated collaboration between the two Congresses. Thus, in order to send this joint letter from the two Congress Continuing Committee Chairs, Mr. C. Philip Brown (Texas Tech University, Lubbock) created the logo that became the symbol of collaboration. This was created specifically for the Terminology effort and was approved by both Continuing Committee Chairs.

Appendix N Words of Wisdom from Voices of the Past

- **Inaugural Meeting** "...feeding a population (of) a country by itself is the basis of public wealth, productivity and general well-being." F. Falke (Germany)
- Second Meeting "The road to wisdom does not necessarily have to go through model farms or model institutes." A. Elofson (Sweden)
- III Congress "While our scientific pursuits bring us into close touch with the realm of nature, yet they often cause in us a certain wistful feeling, inasmuch as by our efforts to improve and increase the pasture land we are led to destroy in many cases virgin nature, causing thereby the disappearance of rare plants." A. Volkart (Switzerland)
- Fourth Congress
 "The outstanding feature of grassland is its complexity. It is impossible to isolate the factors, and I doubt if it will lead us very far if we attempt unduly to isolate the factors on the farm and on the ranges all factors interact."
 R. G. Stapledon, (United Kingdom)
- Fifth Congress"Among the crops contributing to the nutrition of mankind
grasses take a very prominent place, though they are unsuitable
for human consumption as such."
S. L. Mansholt (Netherlands)
- Sixth Congress "We need today to be greatly concerned about food. Abundant food helps to assure peace. Lack of sufficient food breeds discontent and fanaticism, even war. Then, too, lack of food or ability to produce food creates acceptance of strange doctrines, and too often the placement of men with warped minds into positions of great power." The Honorable J. S. Fine, Governor of Pennsylvania (USA)
- *Seventh Congress* "[Grasslands of the world] stand twixt a world of plenty and a world of famine; between a land surface of green oases and a

land of desert; between surface soil stability and accelerated erosion." B. Levy (New Zealand)

Eighth Congress "I can only imagine that the rather late scientific interest in grassland husbandry is due to the fact that grazing is the oldest and probably the simplest and most primitive form of agriculture." H.R.H. Prince Philip, Duke of Edinburgh (United Kingdom)

Ninth Congress "The greatest enemy of men is hunger, and the IX International Grassland Congress could establish directives for programs designing the survival of mankind." Professor Dr. H. Leme (Brazil)

- X Congress"With regard to the arid regions of the tropics and subtropics,
the term grassland is a misnomer for the reason that on them
grass species are the least important constituents of the fodders
eaten by the grazing animal."
Dr. W. Davies (United Kingdom)
- XI Congress "Australia's emergence as an important world producer of wool, meat, and dairy products would not have been possible without the upgrading of native pastures over extensive areas with introduced legumes and grasses and fertilizer, particularly superphosphate." E. M. Hutton (Australia)
- XII Congress
 "You are engaged in problems of grasslands cultivation and we organically link our activities with the cause of peace. This is no mere chance. The guarantee for peace constitutes the most vital and urgent task of all humanity. The problem of boosting the production of all types of products necessary for the development of human society can only be resolved in conditions of peace."
 D. Polyansky (USSR)
- XIII Congress"Our Congress has conveyed many new findings of scientific and
technological progress. Let us link this to the stable assurance of

peace and to social progress, thus making an important contribution to banning the hunger of humanity for all time to come."

R. Lemke (German Democratic Republic)

XIV Congress "An array of scientific disciplines is required to tap the tremendous potential that exists for increasing agricultural productivity through judicious use of grassland resources. Moreover, a sound national grassland philosophy is required by any nation before an efficient grassland agricultural program can be developed." R. F Barnes (USA)

XV Congress "At this meeting we are united by our common enthusiasm for grassland science, which cuts across our separate disciplinary interests and ethnic diversity, by our common commitment to the application of science to improve grassland production and stability, and by our common obligation to the farming community who are stewards of the grassland resources of the world."

L. R. Humphreys (Australia)

- XVI Congress"Let us hope that we can act in such a way that our descendants
will still have sustainable agricultural systems at their disposal
in the future."J. Picard (France)
- XVII Congress "It's now up to you, the speakers and delegates, to debate the issues and provide the world with your recommendations and conclusions. Make them good and meaningful because perhaps the world has not got much time left to ensure the sustainability of its grasslands." R. Brougham (New Zealand)
- XVIII Congress "Product value to grain price ratio will always be one of the major determinants of grassland use worldwide with major consequences for overall land use."
 T. Nolan (Ireland)

- XIX Congress "There can be no doubt of the continuing importance of grasslands to food production and environmental stability, and it seems probable that there will be continuing emphasis on relatively simple pastoral systems in most regions of the world and a move away from high-capital, high-energy systems in regions where they currently exist." J. Hodgson (New Zealand)
- XX Congress "Let the word go forth from this XX International Congress that the world's grazing lands, whether extensive rangeland or planted pastures, must be protected, conserved, and valued as an irreplaceable resource and ranked among our most endangered ecosystems. The future of our human existence depends upon it." V. Allen (USA)
- *XXI Congress* "From the earliest of beginnings, our global grazing lands have been essential to human survival. Our relationship with grazing lands has been increasingly exploitive, but there is now a slow reawakening of our interdependence with the many services provided by grazing lands."
 J. T. O'Rourke (USA), G. Sheath (New Zealand), and V. Allen (USA.)
- XXII Congress"The future of humankind depends deeply on understanding, managing and sustaining grasslands."D. Kemp and D. Michalk (Australia)
- *XXIII Congress* "There are numerous regional, national and global issues with which utilization of grasslands are related. These include the function of grasslands to provide social and cultural needs for many rural societies, their role in reducing greenhouse gas emissions, as water catchments, and the preservation of ecosystems biodiversity. At the same time increased global demand for food must be met without much harm to these resources."
 P. K. Ghosh (India)

Appendix O Tables

			Chair of Continuing
Congress	Country	President	Committee ²
1	Germany 1927	F. A. Falke, Germany	
2	Sweden/Denmark 1930	A. Elofson, Sweden	
III	Switzerland 1933	A. Volkart, Switzerland	
Fourth	United Kingdom 1937	R. G. Stapledon, UK	
Fifth	Netherlands 1949	D. S. Huizinga, Netherlands	
Sixth	USA 1952	P. V. Carden, USA	
Seventh	New Zealand 1956	B. Levy, New Zealand	
Eighth	United Kingdom 1960	H.R.H. The Prince Philip ³	
Ninth	Brazil 1965	M. H. Castelo Branco	
Х	Finland 1966	P. Saarinen, Finland	
XI	Australia 1970	E. M. Hutton, Australia	R.M. Moore, Australia
XII	USSR 1974	P. I. Morosov, USSR	D.E. McCloud, USA
XIII	GDR 1977	R. Lemke, GDR	S.C. Pandeya, India
XIV	USA 1981	R. F Barnes, USA	W.R. Childers, Canada
XV	Japan 1985	I. Nikki, Japan	L.R Humphreys, Australia
XVI	France 1989	J. Picard, France	Y. Maki, Japan
XVII	Australia/NZ 1993	R. W. Brougham, NZ	D. Crespo, Portugal
XVIII	Canada 1997	B. R. Christie, Canada	T. Nolan, Ireland
XIX	Brazil 2001	S. C. da Silva, Brazil	R.J. Clements, Australia
XX	Ireland/UK 2005	J. Flanagan, Ireland	V.G. Allen, USA
VVI	China 2009	F. Hong, Q. Guo,	C Sheath New Zealand
ΛΛΙ		and J. Yun, China	G. Sheath, New Zealallu
XXII	Australia 2013	D. Kemp, Australia	G. Allard, Canada
XXIII	India 2015	P. K. Ghosh, India	D.M. Mwangi, Kenya
XXIV	Kenva 2021	P. S. Harry Kimtai, Kenya	R. Smith. USA

Appendix Table O-1. Presidents and Continuing Committee Chairpersons¹

¹ Presidents were designated by Host Country; Chairpersons of Continuing Committees were elected at the end of the Congress preceding the listed Congress. (Adapted and updated from L. R. Humphreys, 2005).

² At the Fourth Congress, the Executive Committee was composed of the President of the next Congress, who became also President of the Association; the outgoing President of the Congress; Past Presidents; and the Permanent Secretary. By 1956, a newly structured Executive Committee was evolving but no records of its chairs have been found. In 1966, this was renamed as the Continuing Committee and its structure and function were defined as it exists today. R.M. Moore (Australia) was its first Chair.

³ H. G. Sanders (UK) Congress Executive Committee Chair functioned as President during the Congress following the Opening Address by Prince Philip.

Appendix Table O-2a. Executive (1960 to 1965) and Continuing (1966 to 1974) Committee Membership^{1,2}

		Eighth	Ninth	Х	XI	XII
		England	Brazil	Finland	Australia	USSR
F	Region ³	1960	1965	1966	1970	1974
I	United States	K. Rasmussen	K. Rasmussen	D.E. McCloud	D.E. McCloud	W.R. Childers
1	and Canada	Canada	Canada	USA	USA	Canada
п	Latin America	W.F. Kugler	G. I. da Rocha	G.I. da Rocha	F. Perez-Infante	F. Perez-Infante
11	and Caribbean	Argentina	Brazil	Brazil	Cuba	Cuba
111	Australia and	J.G. Davies	R.M. Moore	R.M. Moore	R.H.M. Langer	R.H.M. Langer
111	New Zealand	Australia	Australia	Australia	NZ	NZ
117	South cost Asia	S. Emasiri	S. Emasiri		S.C. Pandeya	S.C. Pandeya
IV	South-east Asia	Thailand	Thailand	-	India	India
V	East Asia	T. Yamada	T. Yamada	S. Nishimura	S. Nishimura	Y. Maki
v	East Asia	Japan	Japan	Japan	Japan	Japan
VI	Mediterranean area and	G. Haussmann	J.V.C. Malato-Beliz	J.V.C. Malato-Beliz	J. Cizek	J. Cizek
VI	Near East	Italy	Portugal	Portugal	Yugoslavia	Yugoslavia
VII	Europe (not including	T.A. Robotnov	T.A. Robotnov	D.F.R. Bommer	D.F.R. Bommer	R.J. Wilkins
VII	Mediterranean)	USSR	USSR	W. Germany	W. Germany	UK
VIII	Africa (not including	C.E.M. Tidmarsh	L. Mukendi	L. Mukendi	J.A. Agyare	J.A. Agyare
VIII	Near East)	S. Africa	Congo	Congo	Ghana	Ghana
	Host Country		A.R. Filho	P. Saarinen	E.M. Hutton	M.A. Smurygin
-	Representative	-	Brazil	Finland	Australia	USSR

¹ Adapted from Humphreys (2005). Note: Regions conformed to names used before the Constitution of 1977 was accepted. (<u>Appendix F-3</u>).

² In this, and the following Tables Numbered 2b, and 2c, the Congress where a person's name first appears is the Congress where that person was elected to serve on the Continuing Committee. The Congress where the person's name last appears begins the last full term of that individuals service on the Committee and their term extends through the following Congress where their replacement is elected. Thus, in the Table above, K. Rasmussen (Canada) was elected to serve at the end of the VIII Congress in Reading (1960). He served two terms which extended through the X Congress in Helsinki (1966) where his term was completed at the end of the Congress and D.E. McCloud (USA) was elected to begin his first term on the Continuing Committee.

³ Region names conform to style used before 1977.

		XIII	XIV	XV	XVI	XVII	XVIII
		GDR	USA	Japan	France	NZ/Aust.	Canada
	Region	1977	1981	1985	1989	1993	1997
T	North Amorica	W.R. Childers	R.F Barnes	R.F Barnes	R. Michaud	R. Michaud	V.G. Allen
1	Nor un America	Canada	USA	USA	Canada	Canada	USA
П	Control Americo	J.J. Paretas	R.A. Martinez	R.A. Martinez	F. Funes	F. Funes	L. Ramirez
	Central America	Cuba	Mexico	Mexico	Cuba	Cuba	Mexico
III	South America	A. Gallardo	A. Gallardo	C. Lascano	C. Lascano	E.A. Serrao	E.A. Serrao
	South America	Venezuela	Venezuela	Colombia	Colombia	Brazil	Brazil
IV	South Fact Acia	Vacant	I.M. Nitis	I.M. Nitis	P. Singh	P. Singh	C. Phaikaew
1 v	South East Asia	vacant	Indonesia	Indonesia	India	India	Thailand
V	Australasia	L.R. Humphreys	L.R. Humphreys	R.W. Brougham	R.W. Brougham	R.J. Clements	R.J. Clements
v Australasia	Austialasia	Australia	Australia	NZ	NZ	Australia	Australia
VI	Fact Agia	Y. Maki	Y. Maki	Z. Tingchen	Z. Tingchen	Don Am Kim	Don Am Kim
VI Eas	Edst Asid	Japan	Japan	China	China	S. Korea	S. Korea
VII Middle East	F. Tosum	F. Tosum	A.E.T. Osman	A.E.T. Osman	M. Munzur	M. Munzur	
	Midule East	Turkey	Turkey	Syria	Syria	Turkey	Turkey
VIII	Mediterranean	A. Corleto	A. Corleto	D. Crespo	D. Crespo	E. Piano	E. Piano
V 111	and Near East	Italy	Italy	FAO Italy	FAO Italy	Italy	Italy
IV	Europe excluding	R. J. Wilkins	A. Hentgen	A. Hentgen	T. Nolan	T. Nolan	A. Peeters
IA	Regions VIII and X	UK	France	France	Ireland	Ireland	Belgium
X Northern Eurasia	V.G. Iglovikov	V.G. Iglovikov	I. Vinczeffy	I. Vinczeffy	R. Dapkus	R. Dapkus	
	Noi ulei li Eurasia	USSR	USSR	Hungary	Hungary	Lithuania	Lithuania
VI	Africa excluding	V.A. Oyenuga	V.A. Oyenuga	E.A. Asare	E.A. Asare	B. Dzowela	B. Dzowela
ΛΙ	Regions VII and VIII	Nigeria	Nigeria	Ghana	Ghana	Zimbabwe	Zimbabwe
	Host Country	E. Wojahn	J.E. Baylor	Y. Maki	A. Hentgen	J. Hodgson	R. Michaud
-	Representative	GDR	USA	Japan	France	NZ	Canada

Appendix Table O-2b. Continuing Committee Membership (1977 to 1997).¹

¹ Adapted from Humphreys (2005). Note: Regions conform to names used in the Constitution accepted in 1977 (<u>Appendix F-4; page 309</u>).

		XIX	XX	XXI	XXII	XXIII ¹
		Brazil	Ireland & UK	China	Australia	India
R	egion	2001	2005	2008	2013	2015
Ι	North America	V. G. Allen USA	G. Allard Canada	G. Allard Canada	R. Smith USA	R. Smith USA
II	Central America and Caribbean	L. Ramirez Mexico	M.F.D. Sanchez Cuba	M.F.D. Sanchez Cuba	F. I. Flores Mexico	F. I. Flores Mexico
III	South America	R. Vera Chile	R. Vera Chile	R. Carvalho Brazil	R. Carvalho Brazil	F. Ortega Chile
IV	South Asia	C. Phaikaew Thailand	S. Premaratne Sri Lanka	S. Premaratne Sri Lanka	P.K. Ghosh India	P.K. Ghosh India
V	Oceania	G. Sheath NZ	G. Sheath NZ	D. Kemp Australia	D. Woodfield NZ	D. Woodfield NZ
VI	East Asia	M. Goto Japan	M. Goto Japan	N. Zhibiao China	N. Zhibiao China	J.K. Lee S. Korea
VII	Middle East	H. Arzani Iran	H. Arzani Iran	H. Barani Iran	H. Barani Iran	H. Esmati Afghanistan
VIII	Mediterranean	M.E.V. Loureno Portugal	M.E.V. Lourenco Portugal	C. Porqueddu Italy	C. Porqueddu Italy	A. Serkan Jordan
IX	Europe excluding Regions VIII and X	A. Peeters Belgium	J. Isselstein Germany	J. Isselstein Germany	J.F. Soussana France	J.F. Soussana France
Х	North Eurasia	G. Nagy Hungary	G. Nagy Hungary	P. Golinski Poland	P. Golinski Poland	A. Adamovich Latvia
XI	Africa excluding Region VIII	A.B. Orodho Kenya	A.B. Orodho Kenya	D. Mwangi Kenya	D. Mwangi Kenya	B. Fadlala Sudan
-	Host Country Representative	S.C. da Silva Brazil	F. O'Mara Ireland	Y.J. Feng China	D. Kemp Australia	P.K. Ghosh India

Appendix Table O-2c. Continuing Committee Membership (2001 to 2015)

¹The new Chair and members of the Continuing Committee will be elected at the Congress in Kenya in 2021. Those listed as serving under the XXIII Congress will continue to serve through the XXIV Congress in Kenya. Note: Regions conform to names used in the current Constitution revised in 2001. (<u>Appendix F-5; page 317</u>).

Member	Organization Represented
Vivien G. Allen	Chair
Pat Bagley	American Forage and Grassland Council
Peter Ballerstadt	American Forage and Grassland Council
Harold Baxter	American Dairy Science Association
David Bransby	Crop Science Society of America
T. F. Brown	American Dairy Science Association
Dwayne Buxton	Crop Science Society of America
Dennis Child	USDA ² /Agricultural Research Service
Jenness Coffey	USDI ³ /National Park Service
Harlan DeGarmo	USDA/ Soil Conservation Service
Henry A. Fribourg	American Forage and Grassland Council
Martha Hood	USDA/National Agricultural Library
Floyd Horn	American Forage and Grassland Council
Douglas A. Johnson	American Society of Agronomy
Earl Kessler	American Dairy Science Association
Frank Khattat	USDI/Bureau of Indian Affairs
Mort Kothmann	Society for Range Management
Garry Lacefield	Forage, Grassland and Range Resources Committee
-	of the American Forage and Grassland Council
Fred Martz	American Forage and Grassland Council
A. G. Matches	American Forage and Grassland Council
Paul McCawley	USDA/Extension Service
Henry Pearson	USDA/Forest Service
Dennis Phillippi	Society for Range Management
Les Reid	American Society of Animal Science
David Sleper	American Forage and Grassland Council
Charles Staples	American Dairy Science Association
Dan Undersander	American Society of Agronomy
Les Vough	Grazing Lands Forum
Joe D. Wallace	American Society of Animal Science
Robert Williamson	USDA/Forest Service
John Willoughly	USDI/Bureau of Land Management

Appendix Table O-3. The First Forage and Grazing Terminology Committee (1989 to 1991)¹

International Members:

John Hodgson	New Zealand
Dennis Minson	Australia

¹The authors of *Terminology for Grazing Lands and Grazing Animals* (FGTC, 1991). ²USDA – United States Department of Agriculture.

³USDI – United States Department of the Interior.

Name	Professional	Location
Name	Affiliation	Location
Mort Kothmann, Chair	Ecology & Management, Department of Rangeland	Texas A&M University College Station, Texas, USA
Gary Frasier	Editor, Journal of Range Management	Society for Range Management, Denver, Colorado, USA
Henry Fribourg	Department of Plant and Soil Science	University of Tennessee, Knoxville, Tennessee, USA
John Hodgson	Agronomy Department, Massey University	Palmerston North, New Zealand
Owen Jewiss	Editor, Grass and Forage Science	British Grassland Society, Reading, England
John McIvor	Research Leader, CSIRO Tropical Agriculture	Brisbane, Australia
Craig Morris	University of Natal	Pietermaritzburg, Natal, South Africa
Matt Sanderson	USDA-Agricultural Research Service	University Park, Pennsylvania, USA

Appendix Table O-4. Task Force Committee to Review Terminology for Grazing Lands and Grazing Animals (1997 to 2008)¹

¹Jointly appointed by the respective Chairs of the IGC and the IRC Continuing Committees to review and suggest revision of *Terminology for Grazing Lands and Grazing Animals*.

Members of the	Representing
Committee	
Vivien G. Allen, Chair	United States
Caterina Batello	Food and Agriculture Organization, Italy
Elbio J. Berretta	Uruguay
John Hodgson	New Zealand
Mort Kothmann	Society for Range Management, United States
Xianglin Li	China
John McIvor	Australia
John Milne	United Kingdom
Craig Morris	South Africa
Alain Peeters	Belgium
Matt Sanderson	American Forage and Grassland Council, United
	States
Supporting Member	
Garry Lacefield	Forage and Grassland Foundation, United States
Representatives to the	
International Congresses	
JIM U Kourke	International Rangeland Congress, United States
Nan Zhibiao	International Grassiand Congress, China
International Congresses	
Chair/President:	
, Guy Allard, Chair	International Grassland Congress Continuing
	Committee - Canada
Iain Wright, President	International Rangeland Congress - India

Appendix Table O-5. Members of the International Terminology Committee formed in 2008¹

¹The authors of *An International Terminology for Grazing Lands and Grazing Animals* published in 2011 (Allen et al., 2011).

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About the Authors



Vivien G. Allen (Photo by C. Philip Brown, Texas Tech University)

Vivien G. Allen

The XIV Congress in Lexington, Kentucky, USA, was the first attended by Vivien Allen. She was then present for every congress through the XXI Congress in China, the first joint meeting with the International Rangeland Congress (IRC). She was on the Continuing Committee from 1997 to 2005 and served as Chair during the last four of these years. Allen led the international team that published 'An International Terminology for Grazing Lands and Grazing Animals' in 2011 that was supported jointly by the IGC and the IRC. She received the BS degree in General Agriculture (1962) from the University of Tennessee at Martin and the M.S. (1973) and Ph.D. (1979) from Louisiana State University with majors in Agronomy (forages) and Animal Science (livestock nutrition). She spent her career first at Virginia Tech,

Blacksburg (1980 - 1995), and then as Thornton Chair of the Forage Research and Teaching Program at Texas Tech University, Lubbock (1996-2011). She retired from Texas Tech University in 2011 as a Paul Whitfield Horn Professor Emeritus. In retirement, she raises commercial Angus Cattle in Tennessee.



Roger J. Wilkins (Photo by Keith Bolsen, Kansas State University)

Roger J. Wilkins

Roger Wilkins attended his first IGC in Moscow in 1974 and then attended all IGCs to the XX Congress in Ireland and the UK in 2005. He served on the Continuing Committee from 1974 to 1981 as representative of Europe other than the Mediterranean and was Chairman of the Scientific Committee for the XX Congress. He played a leading role in drafting the Constitution of the IGC adopted in 1977 and chaired the group that prepared revisions to the Constitution adopted in 2001. Roger Wilkins did his first degree in Agriculture at Reading University, England, graduating in 1963. This was followed by a Ph.D. in Agronomy at the University of New England, Australia, awarded in 1967. He returned to England in 1966 to take a post at the Grassland Research Institute, Hurley. He was involved in grassland research through his

career at the GRI and its successor Institutes. At his retirement in 2000 he was Deputy Director of the Institute of Grassland and Environmental Research and in charge of the North Wyke Research Station, with appointments as Visiting Professor at Reading University and Plymouth University.

Garry D. Lacefield



Garry Lacefield

Garry Lacefield attended his first IGC in Lexington, Kentucky, USA in 1981 and served as chairman of the Mid-Congress Tours. With the exception of Nice, France, in 1989, he has participated in all conferences to date since 1981. He served as chairman of the IGC North American delegation from 1993-2008. He received the Bachelor degree in 1970 and the Masters degree in 1971 in agronomy and biology from Western Kentucky University. In 1974, he received the PhD from the University of Missouri. He joined the University of Kentucky Faculty in 1974 and retired in 2015, as Professor of Plant and Soil Sciences. In retirement as Professor Emeritus at the University of Kentucky, he continues to

speak, write and serve as a consultant. He is co-author of the

book, Southern Forages and the newly released, Wonder Grass-The Story of Tall Fescue in the United States.



S. Ray Smith

S. Ray Smith

S. Ray Smith attended his first IGC in New Zealand/Australia in 1993 and has attended all IGCs to the present with the exception of Brazil in 2001. He has served on the Continuing Committee since the 2013 Congress in Sydney, Australia and as Chair of the Continuing Committee from 2015 through 2021. He is also the President of the upcoming XXV IGC that will be held in the USA in 2023. Ray received a BS degree in Biology (1983) from Asbury University in Kentucky, MSc. (1988) and Ph.D. (1991) from the University of Georgia in Agronomy and Forage Breeding. From 1991-2001, Ray held a research and teaching position at the University of Manitoba, Canada. He then held an Extension and Research position in Forages at Virginia Tech from 2001-2004 and

started his current position as Professor and Forage Extension Specialist at the University of Kentucky. Under his leadership, the University of Kentucky Library is duplicating the entire collection of Congress Proceedings making them accessible and searchable.