Papers of the Sectional Sessions of the 6th International Grassland Congress Applicable in the Philippines*

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The Sixth International Grassland Congress, sponsored jointly by the Government of the United States of America and the Food and Agriculture Organization of the United Nations (FAO) was held August 17 through August 23, 1952, at the Pennsylvania State College, State College, Pennsylvania, with around 1,500 delegates representing 53 countries. About 15,000 people viewed the exhibits which included educational materials on the more efficient use of grassland and modern labor-saving implements and equipment.

In addition to the program of field activities, special events, and general sessions, there were also sessions of at least three in each of the 12 Sections to which the delegates and participants were grouped. The following are the names of the sections with the number of papers read in each indicated by the number appearing at the end of each section name:

A. Genetics and breeding (20).

B. Improvements and managements of pastures, meadows and turf (19).

C. Improvement and management of range lands (15).

D. Ecology and physiology of grasslands (14).

E. Soil management and fertilization (21).

F. Seed production and distribution (19).

G. Soil and water conservation (21).

H. Harvesting and preservation of forage (13).

I. Use of forage in livestock feeding (16).

J. Machinery (6).

K. Experimental procedures in grassland research (14).

L. Improvement and management of tropical grasslands (25).

Papers presented and discussed by delegates and participants from many countries of the world, disclosed the most advanced scientific approaches to grassland farming. Delegates were provided with abstracts of the papers in English, French and Spanish, the official languages of the Congress. The proceedings in two volumes, made clear that grasslands of the world can contribute much toward finding new resources for increasing production and ascertaining ways and means of reversing the downward trend in soil productivity. At this point, it should be borne in mind that grasslands constitute more than half the total land surface of the earth which are not fully developed, and in many cases are declining in soil productivity.

Following the closing of the formal sessions of the Congress, around 200 delegates practically all from countries other than the United States of America took part in four tours to various regions visiting farms, ranches and experiment stations where modern and efficient grassland practices are

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being used. The tours which were integral parts of the Congress and lasted from August 24 to September 7, 1952 covered four areas of the United States namely: I. Midwestern, II. Northeastern, III. Southern, and IV. Western.

In each of the tour-area and in every section of the United States of America visited, there are outstanding examples of achievements in grassland farming. The undersigned, as a Philippine delegate, presented and read two technical papers entitled, "Forest Grazing in the Philippines," authored by Forestry Director Florencio Tamesis and the delegate himself, and "Grasses in the Philippines" prepard by him and Forester Teofilo A. Santos. These papers were read under Section "L" of the "Improvement and management of tropical grasslands" group.

A delegate was free to attend as many as he could Sectional or General Sessions and field activities and special events or meetings in addition to the three sessions under his particular section. In my case, I was able to attend some meetings, field trips, special events and sessions under Sections B, C, and K therein in addition to those under the general sessions which consisted—Opening, Plenary and Summary sessions, Grassland for Recreation, Workshop Reporting and Tours Briefing.

As to the tours, I joined the Mid-Western Group (1) which covered experimental grassland demonstration and local points of scientific interest within the States of Ohio, Indiana, Illinois, Missouri, Iowa and Wisconsin, besides of course those in Pennsylvania. At Madison, Wisconsin, we visited the Forest Products Laboratory, wherein Professor Eugenio de la Cruz, Chief, Division of Forest Investigation was then making observation thereat. With Professor de la Cruz, I was also able to visit the reforestation projects in Central Wisconsin between Marshfield and the famous Wisconsin Dales.

To implement further what we discussed during the Congress at Pennsylvania State College, and after our collective touring in the Mid-Western States, I visited Florida's Tropical Gardens including Key West, the Southernmost U.S. City which has a distance of around 175 miles from Miami Beach, Florida along beautiful parks and highways. Likewise, I implemented our grassland deliberations by visiting the various parks in Washington D.C. particularly those around the Capitol Hill and the White House as well as New York's play grounds and the historical plaza "pasture" and famous Yale's campus in New Haven, Connecticutt.

At this juncture, it may be stated that 25 years ago, I received my Master's Degree of Forestry from Yale University, (M.F. '27 Yale), after receiving my B.S.F. from the University of Idaho in 1926. The three outstanding changes I noticed for the last quarter-century in the United States are the following:

1. Television which was entirely absent then in 1927;
2. Planes including "piper cubs" also barely known then; and
3. "Man-made forest" or forest plantations, likewise, were just being started 25 years ago.

After 40 days in the States, I spent 10 days in Europe visiting among others the famous Hyde and St. James Parks in London, Retiro Botanical Garden established in 1871 in Madrid, and the Vatican Park with Castle Gandolfo Garden in Rome. A period of another 10 days was spent during travels mostly by plane. All in all it was exactly two months trip "around-the-world," August 13, to October 13, 1952.

MIDWESTERN TOUR

From the standpoint of acreage and production the midwest is the most important general farming area of the United States. Emphasis is on production of feed crops for supporting extensive livestock feeding enterprises. The southern part of the region embracing the states of Indiana, Illinois, Missouri and Iowa is the corn belt. Here corn, soybeans, and cereal grains are em-

phasized. Short 3 to 5 year-rotations predominate. Permanent pastures are relegated to rough areas unsuited to cultivated crop production. Hay crops are grown in the rotation primarily for soil improvement and also for feed production. Improved pastures are finding increasing use in the longer rotation. In the northern part of the region, particularly Minnesota, Wisconsin, and Michigan and in eastern Ohio, hay and pasture production predominate. Dairy production in said northern part of the region and beef cattle fattening in feed lots and on pasture in the southern part are the principal livestock enterprises.

Winter feed is required throughout the region. Most forage is now preserved as hay, but use of grass silage is increasing rapidly.

Geographical Description.—The Widwestern or Corn Belt and Lake States include Ohio, Indiana, Michigan, Illinois, Wisconsin, Minnesota, Iowa, Missouri and the eastern portions of South Dakota, Nebraska and Kansas. Our group toured all except Michigan, Minnesota and the last three mentioned states.

The annual precipitation tends to increase from north to south and from west to east within the region, ranging from approximately 25 to 40 inches. Average temperatures in January vary from nearly 6° in the extreme northern part of Minnesota to about 35°, in southern Missouri. Average temperatures in July in northern Minnesota are about 65°, compared to the average in southern Missouri of approximately 80°. The average number of days without killing frosts is 80 to 180 days northern districts and 140 to 210 days farther south.

Farming in the Corn Belt and Lake States has been devoted largely to producing grains for supporting an extensive livestock feeding enterprises. Most of the crops are used to produce dairy and beef cattle, sheep, and swine. Minnesota, Wisconsin, Michigan and eastern Ohio are included in the hay and dairy region of the United States. Southwestern Minnesota, Iowa, Missouri, Illinois, Indiana, and western Ohio are in the Corn Belt. The combined acreages of tame hay and pasturage exceed those of corn and small grains in Indiana, Michigan, Missouri, Ohio, and Wisconsin, and approximately those of corn and small grains in Illinois, Iowa and Minnesota. Dairying is the leading farm enterprise in the northern states of the region. Meat production is of great commercial importance in the southern part. The deep, highly fertile prairie soils characteristic of much of this area are cropped more intensively than the forest soils of the dairy region.

Grassland Characteristics.—Grasslands of this region are producers of dairy and beef cattle, sheep and swine. Kentucky Bluegrass (*Poa pratensis*) and white clover (*Trifolium renens*) predominate in natural pastures. Many of the seeded or improved pastures are grown in rotation with grain crops on an intensive basis. Principal forage species in improved grasslands include bromegrass (*Bromus inermis*), timothy (*Phleum pratense*), orchardgrass (*Dactylis glomerata*), alfalfa (*Medicago sativa*), red clover (*Trifolium pratense*) Ladino clover (*Trifolium repens,* var. Ladino) and birdsfoot trefoil (*Lotus corniculatus*). Some of the better pastures in this region will support more than one animal unit per acre whereas others often require as much as 3 acres. In the Philippines, 1 hectare or 2.47 acres will support one animal. Large quantities of forage are preserved each year in the form of hay silage. Silage preservation is becoming increasingly popular.

Papers Applicable in the Philippines

As already mentioned, the Congress was divided into 12 discussion sections (A-L) concerning the following subjects with the titles of papers applicable in the Philippines listed in the attached list.

In conclusion, it may be said here that the completeness and choice of subject matter

suggests that grassland research including those for the tropics as well as for the Philippines is progressing along broad lines. The five factors each interacting which in turn determine grassland productivity are: (1) productive capacity of the soil, (2) species and strains of plants available, (3) type and genetic constitution of animals to be raised, (4) management, and (5) social relations—each and all of them are not only discussed individually, but consider also their interesting relations. Papers on breeding and selection of plants, soil improvement, management, and other phases, suggest that empirical methods of procedure are giving way to more specific techniques.

From the foregoing, it is very clear that the Philippines may be able to learn and adopt whatever is applicable to our present needs. In short, we have to be practical and follow only those that are of value to our conditions and/or circumstances. I thank you.

THE CONTRIBUTION . . . (*Con't from p.* 4)

tary food source from the game and fish that they may be made to supply.

7. *Forests provide recreation opportunities for farm families.* As a country increases in population and becomes more densely settled, and especially as it becomes more highly industrialized, the need for open spaces where people may go for recreation increases. Forests provide room and playgrounds for this purpose. In the United States and in many other countries, the forested areas are becoming increasingly more valuable for recreational purposes. In some of the more densely settled areas of America, especially through New York and New England, the public forests have been developed into extensive picnic and playgrounds where millions of people go each year for recreation and relaxation. Not much use has been made as yet of forests for this purpose in most Southeast Asian countries, but their use for this purpose will increase. It will come as the lower and middle-income groups of the population improve so that they have more leisure time and more money to spend for recreation purposes.

To summarize, it is well to remember that forests are a most valuable asset. While their use no doubt always will be most highly regarded from the standpoint of their major value—that of providing lumber and other forest products, at the same time they have many other valuable assets—assets that are the value of forests for the protection of watersheds, for the stabilization of soil on sloping land, for supplementary grazing for livestock, for supplying off-season labor opportunities, and for recreation purposes. As time passes, these so-called secondary assets of forests will increase in importance. Every citizen should have a personal interest in public forests of which he is part owner, to see that conservation practices are followed through judicious use, and that the forest are protected and preserved in such a way as to pass on to future generations both the primary and secondary benefits of well managed forest land.