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Venezuela

NIS 37

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Figure 1: Organization of Veterinary Services in Venezuela, 1958.

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A. General

Although Venezuela has a longer history of veterinary services than most other South American countries, little constructive progress has been made in the fields of animal health protection or veterinary public health.

While considerable budget outlays for animal health and veterinary public health projects have been approved periodically, the number of veterinarians in the country is far too small to provide effective services. Furthermore, the organization, supervision and conduct of services are inefficient and wasteful. Continuity and regular support for various veterinary programs are lacking, leading to deterioration of occasional small advances in animal health protection. Outside of the major cities there is little interest in development of veterinary public health or veterinary sanitation programs. Aside from considerable interest on the part of cattle raisers in foot-and-mouth disease prevention, demand for regular supervised veterinary animal health projects has not been developed.

Some effort has been made to establish provincial or regional diagnostic service units but lack of materiel and financial support render these ineffective in combatting Venezuela's numerous and serious animal diseases. Accurate information on the extent and seriousness of animal diseases is lacking. An obviously inefficient veterinary organization is incapable of providing continuing reliable day to day or year to year services.

Venezuela depended for many years on contact with French veterinary authorities

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for advice regarding the organization of veterinary services, but in recent years has requested some technical assistance from the Food and Agriculture Organization of the United Nations. 2/ 5/ 7/ 10/ 18/ 19/ 21/

B. Environmental factors

1. Topography and climate -- Most of Venezuela's agricultural land now devoted to livestock production lies in the western humid region remote from population centers. The movement of cattle to market results in considerable loss in weight and condition and exposes vast numbers to diseases against which preventive precaution is seldom exercised. 4/ 38/

2. Socio-economic pattern -- Livestock raisers are generally independent minded individuals, with little regard for modern animal health technology. A considerable proportion of livestock raisers operate in areas remote from readily available veterinary services and, consequently, have long relied on empirical or "folk" remedies for animal ailments. 4/ 38/

4. Nutrition

b. Food supply -- Venezuela has been deficient in production of meat and milk even for the relatively low per capita consumption, and has been forced to rely on imports to supplement local supply. However, dairy production is currently reaching a level where imports of dairy products are significantly reduced. Great emphasis is being placed on increased production of animal products through introduction of breeding stock, expanded extension services, price support, and land reform measures, but implementation of such programs past the planning stage is slow and cumbersome. 26/ 31/

c. Food sanitation, storage and technology -- Meat sanitation and inspection are generally inadequate. Programs for an expanding network of supervised slaughtering

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facilities have been developed but few of these units are yet effectively operational.

The refrigeration chain from production to consumer is incomplete in most areas and the retail distribution system is often unsanitary. 6/ 31/ 34/ 35/

C. Diseases

2. Diseases of animals -- Venezuelan livestock and other animals are affected by as wide a variety of serious diseases and parasites as are those of most other South American countries. Control of these diseases is only intermittently carried out and regression to periodic instances of epizootic or near epizootic proportion occurs. A considerable part of the cattle population is maintained for extended periods in areas beyond accessible veterinary services where the not infrequent occurrence of infectious diseases causes extensive mortality and morbidity. 7/ 10/ 18/ 21/

a. Prevalent animal diseases

(1) Foot-and-mouth disease -- Foot-and-mouth disease broke out in Venezuela in 1950 and since that time periodic widespread occurrences have seriously affected livestock production. Two antigenically different virus types, O and A, have been identified, complicating the immunization programs. Early efforts to combat the disease through purchase of vaccine abroad have been replaced through development of adequate local vaccine production. Periodic interruption of vaccine production and distribution along with ineffective supporting sanitary and quarantine policies preclude effective control of this disease. The disease exists in Colombia as well, and introduction from one area to the other occurs continuously as a result of unrestricted movement of animals across a wide border area. The excellently equipped laboratory of the Institute for Control of Aftosa, connected with the facilities of the Institute for Veterinary Investigations in Maracay (10-15 N - 67-37 W), in addition

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to producing vaccine by the Frenkel method is engaged in promising research on new tissue culture vaccine production techniques. Success in this endeavor would assure economical large-scale vaccine production. 7/ 10/ 18/ 20/

(2) Anthrax -- Anthrax is common and in areas where routine immunization is not practiced losses are heavy. Most of the vaccine for use against this disease is produced locally. Hides from animals dying from anthrax are commonly marketed without restriction, thus exposing an element of the human population to infection. 7/ 10/ 21/

(3) Rabies -- Both canine rabies and paralytic bovine rabies transmitted by bats are common in Venezuela. Neither canine vaccination nor stray dog control programs are effectively carried out. In some areas where bat transmitted rabies is common in cattle attempts have been made to immunize animals with a high egg passage (HEP) vaccine. While this offers considerable protection against the disease in bovines, vaccination has not been adopted on a large scale because of economic limitations. 7/10/21/28/

(4) Piroplasmosis -- Piroplasmosis is a protozoan blood parasite disease of cattle, transmitted by a tick, Margaropus australis in Venezuela. Loss from debility in native cattle is severe and mortality among imported cattle is high. Since tick control through spraying or dipping is lax, the disease takes a continuously high toll, and remains one of the most economically important parasitic diseases of this country. 7/ 10/ 21/

(5) Torsola -- Torsola, the larval stage of the fly, Dermatobia hominis, called nuche in Venezuela, causes extensive hide and meat damage as it migrates and emerges through the skin. Secondary infection and other parasitic infestation of the wounds at the site of emerging larva cause abscesses and extensive trauma which, in addition to local effect, results in loss in condition. 7/ 10/ 39/

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(6) Internal parasites -- Helminth infestation, particularly in young stock, is probably the greatest factor in livestock production losses in Venezuela. These infestations include a wide variety of parasites, most of which are not controlled to any great extent anywhere within the country. Estimates of production loss have been placed as high as 40 percent and until these conditions are relieved through sanitary practices and regular veterinary control programs an efficient livestock production system cannot be achieved. 7/ 10/ 21/

(7) Equine infectious anemia -- This equine disease is considered the major cause of losses among horses in Venezuela. A great deal of research has been devoted to the study of this disease believed to be caused by a virus. No cure or practical preventive measures have been developed. 7/ 10/ 20/ 21/

(8) Newcastle disease -- Newcastle disease has seriously retarded development of the poultry industry in Venezuela for many years. Recently the trend towards relatively large-scale poultry production has made vaccination more practical and poultry products are increasing. Rural farm flocks are still subject to frequent outbreaks because of neglect in carrying out preventive measures. 18/ 19/

b. Other important diseases -- Other important animal diseases are Venezuelan and eastern equine encephalomyelitis, brucellosis, blackleg, pasteurellosis and mastitis. 19/ 21/

D. Veterinary medical organization and administration

1. Civilian

a. Organization -- Venezuela's force of 336 veterinarians, largely employed in state services, is far too small to cope effectively with the numerous animal disease and veterinary public health problems. Only twenty veterinarians are

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directly involved in public health duties. Laboratory and research work receives considerable attention in the organizational structure. Private practice is very limited, with the major emphasis on pet practice in larger cities.

At the national level, the Directorate of Livestock, under the Ministry of Agriculture, is composed of three divisions: (1) Animal Industry, (2) Veterinary Investigations, (3) Animal Sanitation. Each division is made up of a number of sections (see Figure 1) charged with specific responsibilities. In addition to this central organization, the Ministry of Agriculture maintains direct supervision over eleven agriculture and livestock zone offices, each with a number of local substations from which field activities are operated. Laboratory diagnostic facilities have been established at a number of the field substations.

Figure 1

The major laboratory, a research and biological production headquarters of the Division of Veterinary Investigations is located at Maracay. Inspection and quarantine are carried out by a section of the Animal Health Division.

The overall livestock development programs have received considerable emphasis and financial support from the agricultural budget in recent years, but a specific breakdown of expenditures is not available. 2/ 7/ 14/ 19/ 21/ 31/

b. Legal controls

(1) Licensure -- A degree, Doctor en Medicina Veterinaria from the Universidad General de Venezuela is required for licensure. In some instances, degrees from foreign veterinary educational institutions are recognized. 14/ 19/

(2) Quarantine -- Health certification is required for entry of animals from foreign countries. In addition, animals may be quarantined at La Guaira (10-36 N - 66-56 W), Porto Cabello (10-26 N - 68-10 W), and Maracaibo (10-38 N - 71-37 W).

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Inspection and quarantine points are also established at locations on the Venezuela-

Colombia border in an effort to check the introduction of foot-and-mouth disease. 7/18/38/41/

(3) Inspection -- Regulations applying to inspection and supervision of meat and milk distribution are in effect. However, these regulations are seldom enforced, particularly in rural areas. Veterinary products are imported duty-free under the Venezuelan Customs Tariff Act, but must be approved by the Ministry of Health and specifically labeled for veterinary use. 7/ 10/ 35/ 41/

c. Professional veterinary medical organization -- An Association of Veterinary Medicine (Asociacion de Medicos Veterinarios), has been established but control over membership is not specifically reported. 13/

d. Veterinary research -- Virtually all Venezuelan veterinary research of significance is conducted at the Instituto de Investigaciones Veterinarias in Maracay. The work at this Institute, often termed research, is in many cases not particularly high in caliber. However, recent reports indicate progress is being made in tissue culture technique for cultivation of viruses, particularly that of foot-and-mouth disease, for vaccine production. With United Nations Food and Agriculture Organization technical assistance rather extensive studies have been made on the cause and effect of equine infectious anemia. Climatological studies undertaken several years ago have gradually declined and equipment provided in the original project has deteriorated.

Some parasitological studies, evidently stimulated by German immigrant veterinarians, are being conducted at the Veterinary Faculty of the University in Caracas

(9-05 N - 69-50 W). 7/ 9/ 10/ 18/ 20/ 38/

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f. Emergency medical services -- At intervals when foot-and-mouth disease becomes rampant the Department of Livestock veterinary staff and military units are mobilized to conduct mass vaccination programs and restrict the movement of affected or exposed stock. This procedure is not conducted on a regular basis and intermittent outbreaks of the disease occur throughout the country. 2/ 7/ 12/ 13/

2. Military veterinary services -- A small military veterinary unit exists, which is chiefly concerned with attending to equine diseases and ailments. Its original laboratory units have been merged with the Institute of Veterinary Investigations at Maracay. Troops from regular military units are frequently mobilized for emergency foot-and-mouth disease measures. 7/ 10/ 12/ 13/

E. Veterinary manpower

Of the total 336 veterinarians in Venezuela, 260 are employed in full-time state service. One hundred sixty state veterinarians are assigned in field duties, 20 in public health activities, 30 in laboratory services and 15 in other unspecified positions. Fifty-four veterinarians not in full-time state service are engaged in private practice, parttime state service or laboratory activity. Twenty-two veterinarians are full-time teaching faculty members and 13 are employed on a parttime basis.

Most of the 11 zonal agricultural stations have one or more veterinarians permanently assigned and the remainder of the field force is despatched to areas according to requirements as they occur. The ratio of veterinarians to livestock population is very low by European or North American standards, but compares similarly to that of other South American countries. 14/ 19/

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One veterinary faculty at the Central University of Venezuela, Maracay, educates about 20 to 30 students per year and some additional training is carried out at the Institute for Veterinary Investigations or abroad. 1h/ 19/

F. Veterinary facilities

The Institute of Veterinary Investigations at Maracay has adequate facilities for biological production, diagnostic work and research. Modest veterinary diagnostic and supply stations have been established in eleven zones in the more accessible regions over the past ten years. Remote cattle areas are still without adequate veterinary facilities and services. 2/ 7/ 13/

G. Veterinary supplies and materials

The Institute of Veterinary Investigations' Department of Production produces the major part of Venezuela's veterinary biological requirements and some pharmaceuticals. A few foreign firms maintain distribution units for their products in Venezuela or market these through agencies dealing in a variety of products. A section of the Institute of Veterinary Investigations has acquired adequate modern equipment for production of foot-and-mouth disease vaccine, a biological required and used in considerable volume. 2/ 7/ 12/ 13/ 11/

H. Reference data

Figure 1: Organization of Veterinary Services in Venezuela, 1958. 2/

I. Comments on principal sources

1. Evaluation -- Most of the source material available on veterinary subjects deals in generalities. Specific details of animal disease incidence, investigational

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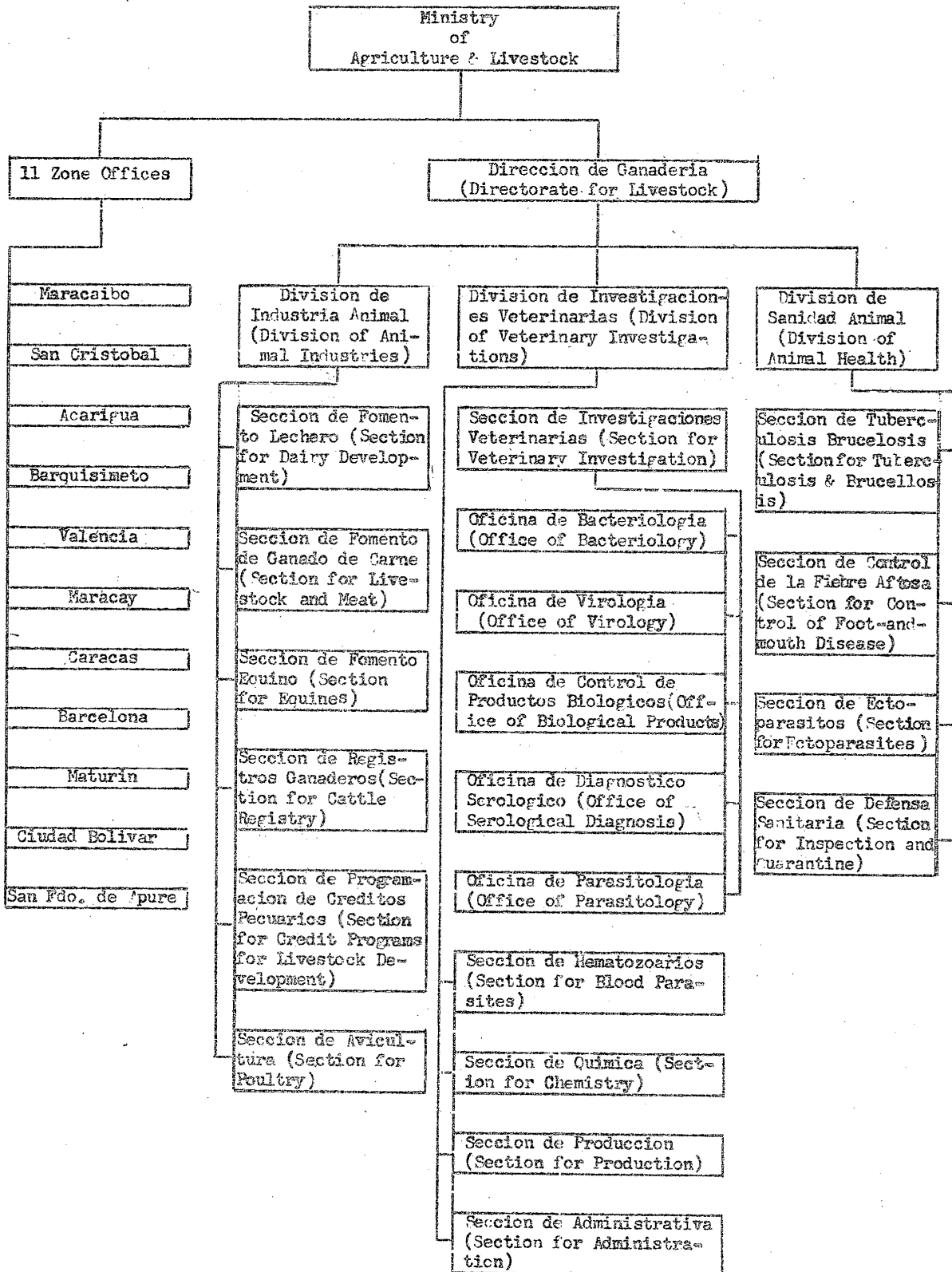
procedures and veterinary field activities are lacking. Information on the production of veterinary materials is fairly adequate.

2. List of sources (in order of importance).

- (1) Boletin del Instituto de Investigaciones Veterinarias (Bulletin of the Institute for Veterinary Investigations). Various issues. Division de Investigaciones Veterinarias, Ministerio de Agricultura y Cria. Maracay. 1952-1955. (Unclassified)
- (2) Campo (Farm). Various issues. Organo oficial de la Sociedad Rural del Zulia. Maracaibo. 1957-1958. (Unclassified)
- (3) United Nations, Food and Agriculture Organization. Report of the International Meeting on Veterinary Education. Held in London, United Kingdom 25 to 30 April 1960. Rome. April 1960. (Unclassified)
- (4) Revista de Medicina Veterinaria y Parasitologia (Review of Veterinary Medicine and Parasitology). Various issues. Organo de la Facultad de Medicina Veterinaria. Maracay. 1953-1957. (Unclassified)
- (5) Organizacion Administrativa del Ministerio de Agricultura y Cria. (Organization and Administration of the Ministry of Agriculture and Livestock). Caracas. 1959. (Unclassified)

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Figure 1: Organization of Veterinary Services in Venezuela, 1958.



Source: 2/

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MASTER BIBLIOGRAPHY

Venezuela

1. Shefrin, Frank, ed. Agriculture Abroad. vol. XIV, no. 6. Economics Division, Department of Agriculture. Ottawa, Canada. December 1959. (Unclassified)
2. Organizacion Administrativa del Ministerio de Agricultura y Cria (Organization and Administration of the Ministry of Agriculture and Livestock). Caracas. 1959. (Unclassified)
3. Boletin Mensual de Estadistica (Bulletin of Monthly Statistics). vol. XIX, nos. 11/12. Ministerio de Fomento Direccion General de Estadistica. Caracas. November-December 1959. (Unclassified)
4. Memoria y Cuenta (Record and Census of the Ministry of Agriculture and Livestock.) Ministro de Agricultura y Cria. Caracas. 1955. (Unclassified)
5. La Industria Ganadera en Venezuela (The Cattle Industry in Venezuela). Ministerio de Agricultura y Cria. Caracas. 1955. (Unclassified)
6. La Industria Ganadera de Carne en Venezuela. Problemas Economicos y Perspectivas. (The Cattle Meat Industry in Venezuela. Economic Problems and Prospects.) Edicion del Ministerio de Agricultura y Cria. Caracas. 1958. (Unclassified)
7. Boletin del Instituto de Investigaciones Veterinarias (Bulletin of the Institute for Veterinary Investigation). Various issues. Division de Investigaciones Veterinarias, Ministerio de Agricultura y Cria. Maracay. 1952-1955. (Unclassified)
8. Anemia Infecciosa del Caballo (Equine Infectious Anemia). Servicio de Informacion Techia, Ministerio de Agricultura y Cria. Caracas. 1948. (Unclassified)
9. Informe Sobre las Labores Realizadas por el Instituto de Produccion Animal Durante el Periodo de Setiembre de 1955 a Diciembre de 1956. (Information on the Work of the Institute of Animal Production During the Period September 1955 - December 1956.) Universidad Central de Venezuela, Facultades de Agronomia y Medicina Veterinaria Instituto de Produccion. Maracay. 1957. (Unclassified)
10. Revista de Medicina Veterinaria y Parasitologia (Review of Veterinary Medicine and Parasitology). Various issues. Organo de la Facultad de Medicina Veterinaria. Maracay. 1953-1957. (Unclassified)
11. Cria del Cerdo (Livestock Extension Publications). Various issues. Ministerio de Agricultura y Cria, Direccion de Ganaderia. Caracas. 1957-1959. (Unclassified)
12. El Agricultor Venezolano (The Venezuela Agriculturalist). Various issues. Publicacion del Ministerio de Agricultura y Cria. Caracas. 1956. (Unclassified)
13. Campo (Farm). Various issues. Organo Oficial de la Sociedad Rural del Zulia. Maracaibo. 1957-1958. (Unclassified)
14. Blood, Benjamin D. "The Veterinary Medical Profession in the Americas: Its Educational Program." The Journal of the American Veterinary Medical Association. vol. 126, no. 938. Chicago, Illinois. May 1955. (Unclassified)
15. United Nations, Food and Agriculture Organization. Recent Developments Affecting Livestock Production in the Americas. Rome. 1956. (Unclassified)
16. Venezuela Up-to-Date. vol. I, no. 2. Embassy of Venezuela, Information Service. Washington, D. C. April-May 1960. (Unclassified)
17. Venezuela Up-to-Date. vol. I, no. 3. Embassy of Venezuela, Information Service. Washington, D. C. June-July 1960. (Unclassified)

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18. United Nations, Food and Agriculture Organization. Report of the Fourth FAO Inter-American Meeting on Livestock Production. Held in Kingston, Jamaica, Federation of West Indies 22 July - 1 August 1958. Rome. August 1958. (Unclassified)
19. United Nations, Food and Agriculture Organization. Report of the International Meeting on Veterinary Education. Held in London, United Kingdom 25 to 30 April 1960. Rome. April 1960. (Unclassified)
20. United Nations, Food and Agriculture Organization. ETAP Report No. 1213. Informe al Gobierno de Venezuela Laboratorios de Veterinaria Con Especial Referencia a la Anemia Infecciosa del Caballo (Report to the Government of Venezuela on Veterinary Laboratories with Special Reference to Equine Infectious Anemia). Rome. 1960. (Unclassified)
21. United Nations, Food and Agriculture Organization/Office of International Epizootics. FAO/OIE Animal Health Yearbook 1959. Rome. 1960. (Unclassified)
22. United Nations, Food and Agriculture Organization. Production Yearbook 1959. Rome. 1960. (Unclassified)
23. U.S. Department of Agriculture. Foreign Agricultural Service Report No. AGR 27. "Venezuela: Land Settlement and Development." Caracas. September 19, 1960. (Unclassified)
24. U.S. Department of Agriculture. Foreign Agricultural Service Report No. AGR 33. "Venezuela: Agricultural Situation." Caracas. October 15, 1960. (Unclassified)
25. U.S. Department of Agriculture. Foreign Agricultural Service Report AGR 62. "Venezuela: Agricultural Policy." Caracas. March 22, 1960. (Unclassified)
26. U.S. Department of Agriculture. Foreign Agricultural Service Report No. AGR 15. "Venezuela: Livestock." Caracas. August 27, 1960. (Unclassified)
27. U.S. Department of Agriculture. Foreign Agricultural Service Report No. AGR 43. "Venezuela: Livestock." Caracas. December 28, 1959. (Unclassified)
28. U.S. Department of Agriculture. Foreign Agricultural Service Report No. AGR 189. "Venezuela: Outbreak of Bovine Hydrophobia on Guajira Peninsula." Caracas. April 15, 1958. (Unclassified)
29. U.S. Department of Agriculture. Foreign Agricultural Service Report No. AGR 25. "Outbreaks of Foot and Mouth Disease." Caracas. September 30, 1958. (Unclassified)
30. U.S. Department of Agriculture. Foreign Agricultural Service Report No. AGR 38. "Venezuela: Livestock--Minag Plans National Census of Atrophic Rhinitis." Caracas. December 18, 1959. (Unclassified)
31. U.S. Department of Agriculture. Foreign Agricultural Service Report No. AGR 167. "Venezuela: Some Details of the Livestock Development Program." Caracas. February 26, 1958. (Unclassified)
32. U.S. Department of Agriculture. Foreign Agricultural Service Report No. AGR 45. "Establishment of National Sanitary Standards Concerning Slaughter, Processing, Conservation, and Sale of Meat and Fish." Caracas. May 4, 1959. (Unclassified)
33. U.S. Department of Agriculture. Foreign Agricultural Service Report No. AGR 147. "Venezuela: New Animal Quarantine Regulations." Caracas. November 28, 1956. (Unclassified)
34. U.S. Department of Agriculture. Foreign Agricultural Service Report No. AGR 144. "Venezuela: New Quarantine Regulations for Meats." November 26, 1956. Caracas. (Unclassified)

50X1

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35. U.S. Department of Agriculture. Foreign Agricultural Service Report No. AGR 17. "Venezuela: Livestock and Meat--Increasing Interest in Slaughterhouse Operation and Meat Packing." Caracas. October 6, 1959. (Unclassified)
36. U.S. Department of Agriculture. Foreign Agricultural Service Report No. AGR 181. "Venezuela: Ministry of Agriculture Announces Program for Development of Net of Slaughterhouses." Caracas. April 2, 1958. (Unclassified)
37. U.S. Department of Agriculture. Foreign Agricultural Service Report No. AGR 26. "Venezuela: Livestock and Meat--Some Information on Meat Packers in Venezuela." Caracas. September 17, 1960. (Unclassified)
38. Personal communication. United Nations Food and Agriculture Organization personnel. Washington, D. C. 1960. (Unclassified)
39. . Pieles Y Cueros (Hides and Skins). Ministerio de Agricultura Y Cria. Caracas. 1956. (Unclassified)
40. United Nations, Food and Agriculture Organization. Report of the First Meeting of the Joint FAO/OIE Expert Panel on Tick-Borne Diseases of Livestock, Held in London, England 24 - 29 November 1953. Rome. 1959. (Unclassified)
41. U.S. Department of Commerce, Office of International Trade. "Veterinary Medicinals and Biologicals in Venezuela." World Trade in Commodities. vol. VII, Part 3, No. 4. Washington, D. C. January 1949. (Unclassified)

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North Korea

*ABCD - Dept of Agri
NIS 41B Sect 45
vet med*

A. General

North Korea's livestock production falls far short of providing animals *@ Oct 63*
for draft purposes or livestock products for human consumption. Since the
cessation of the Korean war there has been a considerable effort, abetted
by Chinese and Soviet technicians, to raise the level of production to prewar
levels. In addition to animal health control, management, and fodder crop
development, there has been a significant introduction of breeding animals
from Soviet areas. About half of the ~~corps~~ of Japanese trained veterinary
personnel, comprised mostly of persons trained for short terms at technical
level, in all of Korea remained in North Korea. With these technician level
personnel, Soviet and Chinese veterinary specialists assisted the North Korean
government in setting up formal veterinary training within the country as
well as providing fellowships for training in China and the USSR.

Although evidence of specific progress related to animal health control is
meager, it appears that North Korea has approached the level of progress reported
in South Korea. That is, the major epizootic diseases are relatively well
controlled, but parasitic diseases, nutritional deficiencies, and a few
of the diseases for which there are no effective immunizing agents still take
a considerable toll.

Veterinary public health and food sanitation standards are probably
no further advanced than those of other countries of that area. However, North
Korean customs and traditions are very much the same as those in other oriental
countries. Therefore, the practices of cooking foods well eliminates at least

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a part of the problems related to food-borne diseases and contaminated products. 2/ 4/ 5/ 8/ 11/ 13/ 14/ 15/

B. Environmental factors

1. Topography and climate -- North Korea's topography and climate are harsh impediments to effective livestock production. The terrain, available for production of livestock fodder, is low in fertility, and the relatively short growing season severely limits the quantity of feeds that can be stored for the long winter months. 8/ 11/ 15/

2. Socio-economic pattern -- Although a great need exists for expanding livestock, particularly for draft purposes, little of the available land resources can be taken out of food crop production to support great increases in animal numbers. Small domestic animals exist in North Korea, principally as scavengers, and there is little hope for significant increases in numbers over the prewar level. 8/ 13/ 14/ 15/

3. Animal and plant life

(1) Mosquitoes -- Culex pipiens and C. tritaeniorhynchus are believed to vector Japanese B encephalitis in Korea. Anopheles hyreanus var. sinensis is a vector of Plasmodium vivax and Setaria digitata. Aedes koreicus is the most common of this species.

(2) Flies -- Several species of culicoides have been noted but not identified. Stomoxys calcitrans is common and believed to carry Setaria labiatopapillosa, a filarial worm of cattle. Oestrus ovis is a common parasite in Korean sheep. Other filth flies known in Korea are Musca domestica, M. vicina,

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Muscina stabuloris, Fannia canicularis, Calliphora erythrocephala, C. vomitoria,
Lucitia sericate, and Sarcophaga spp.

(3) Lice

(4) Fleas -- The most common fleas in order of apparent numerical
occurrence are:

Xenopsylla cheopis

Monopsyllus anisus

Ctenopsyllus seguis

Ceratophyllus fasciatus

(5) Ticks and mites -- Only a few ticks are known in Korea.

Haemaphysalus bispinosa is quite common. Several Dermacentor spp. have been
reported. Trombicula spp. have been reported in Korea. Cimex lectularius
and C. hemipterus are common.

(6) Other arachnids and insect pests.

(7) Mollusks -- Several species of mollusks are the first intermediate
hosts of Paragonimus westermani, which is ~~widespread in Korea~~: Limnaea perva
~~is the intermediate~~ host of Fasciola hepatica, which is common in domestic
animals in Korea.

(8) Worms -- Paragonimus westermani affect man and animals. Taenia
saginata is the most common human cestode in Korea. Taenia solium is seen
rarely. Strongyloides stercoralis has been reported frequently. Ascaris
lumbricoides is common in every region. Ancylostoma duodenale is found in
most parts of Korea. Setaria spp. are common in animals and Setaria digitata
is important in lumbar paralysis of goats and equines. Trichocephalus trichiurus
is common.

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(9) Reptiles

Agkistrodon halys blomhoffi (Mamushi)Natrix vibakari ruthveni

(10) Rodents

Rattus norvegicus norvegicusR. norvegicus hibernicus2/ 4/ 9/ 10/ 11/ 13/ 14/ 15/

4. Nutrition

a. Dietary level -- Koreans fondness for raw shellfish and fish, one of the few uncooked types of food favored, leads to relatively high incidence of paragonimiasis and clonorchiasis.

b. Food supply and distribution -- North Korean agriculture officials report expected food crop production increases during the three year period (1956-1958), ranging from 22.4 percent to more than 100 percent for some crops over the 1953-1955 averages. Despite the "paper increases" in post-war years, North Korea continues to depend on grain and other food imports to satisfy domestic requirements. In respect to livestock, a considerable effort has been made to increase production through expanded animal health control, breeding and management programs. 4/ 13/ 14/ 15/

c. Food sanitation, storage, technology -- Food sanitation and inspection is primitive in North Korea compared with western standards. Techniques for and supervision over production probably closely paralleled those of most other oriental cultures, which other than those in force in Japan, would be considered unacceptable for insuring healthful distribution and marketing of food. 4/ 13/ 14/ 15/

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C. Diseases

2. Diseases of animals -- The animal disease problems of North Korea are essentially the same as those of the Republic of Korea. Progress in overcoming problems resulting from war disruption of animal health and animal husbandry programs apparently parallels that of the Republic. The major efforts have been, in both cases, control and elimination of the major epizootic diseases and providing adequate feeds and fodder for a relatively fast post-war expansion in livestock numbers.

(1) Distomiasis -- Trematode infestation throughout Korea has been and remains one of the greatest sources of livestock production losses. Because of the widespread dispersion of snails, the intermediate hosts, for various flukes, the husbandry methods and the natural obstacles to snail control, this disease will continue to be one of the chief causes of lowered production for some time to come.

Fasciola hepatica is the most common fluke affecting Korean livestock but Fasciola gigantica is not uncommon. Dicrocoelium lanceatum has been identified also. Eurytrema pancreaticum is quite frequently found in the pancreatic ducts in sheep, goats and cattle.

(2) Hog cholera -- Hog cholera has, for many years, been a major threat to Korea's pig production. After the war North Korea expanded biological production and organized significant anti-epidemic measures. According to North Korean official reports, losses as a result of vaccination declined by 36 percent in 1956 in comparison to losses recorded in 1955.

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The standard vaccines employed in North Korea are the crystal violet type and an aluminum hydroxide tissue vaccine, but there is some evidence that the newer modified attenuated vaccines have been used to a limited extent.

(3) Fowl plague -- Fowl plague is the most serious poultry disease in Korea, and it may be complicated by the concurrent occurrence of Newcastle disease. The emphasis placed on production of biologics to combat this disease in comparison to that applied to other diseases is indicative of its economic importance. Since immunity is relatively short-term and the virus survives from season to season, this disease will continue to be a limiting influence on poultry production in Korea for some time to come.

(4) Haemosporidiosis -- The specific blood protozoan parasites affecting North Korean livestock are not known. However, babesiae, anaplasma, and possibly other forms are known to be present. Babesiae cause huge losses in cattle and horses. Native cattle are naturally preimmunized against anaplasms and, consequently, losses from this parasitic disease are less significant. Tick and other vector control are very difficult under Korean husbandry conditions where animals are kept individually to a large extent. Hence, these diseases will continue to take a heavy toll.

(5) Equine encephalitis -- Japanese B encephalitis is prevalent in Korea and its affect on horses is serious. The virus is transmitted by mosquitoes; birds and swine are reservoirs of the virus. Although death losses in horses may not be great, infection often results in rather serious after effects. Cattle, sheep and goats are also affected. In swine the disease may cause severe losses in young pigs and cause pregnant sows to abort.

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(6) Pasteurellosis -- The scope of pasteurellosis in Korea is obscure. Certainly it is a significant disease entity, but the particular pasteurellae species responsible for reported livestock losses is not known. In cattle a composite strain formalized vaccine is used extensively. Results from attempts to immunize animals against multiple strains elsewhere have not resulted in the success claimed in North Korea, and the claim for successful prevention is further tempered by statements that immunity is of short duration and effective in only 50 to 60 percent of vaccinates.

(7) Other diseases -- Sheep pox, anthrax, brucellosis, malignant catarrhal fever, blackleg, leptospirosis, rabies, and swine erysipelas, are other important diseases in North Korea. Various parasitic infestations, including mange, echinococcosis, filariasis and gastro-intestinal nematodiasis, are also important.

2/ 4/ 11/ 12/ 13/ 14/ 15/

D. Medical organization and administration (Veterinary)

1. Civilian -- After the separation of North Korea, in 1953, the Korean Labor Party (KNDR) organized a network of Government Veterinary Services, an Agricultural Institute with a Veterinary Faculty and Scientific Research Veterinary Institute.

In 1956, reorganization took place and a Veterinary Administration was formed in the Department of Agriculture. Veterinary Branches were established in each of the provinces. The Zooveterinary Institute was separated from the Agricultural Institute. At the same time, the Agricultural Academy was formed and three sections, (1) Veterinary, (2) zootechnical, (3) feed

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procurement were formed under the Assistant Academy Director, a veterinarian.

The Scientific Veterinary Institute is located at Wonsan and is composed of six departments, and includes units for the production of 10 medical sera, 14 vaccines and 12 diagnostic preparations.

A modern veterinary laboratory was reported constructed in Pyongyang in 1955. Its functions and direction are not revealed.

Pharmaceuticals and antibiotics for veterinary use probably originate from the chemical and fermentation plants located chiefly in Pyongyang.

North Korea reports a vast network of veterinary medical institutes and animal health stations at provincial and district level were established during the Three-Year Plan. These units are credited with an important part in the reported elimination of several diseases, such as rinderpest, contagious bovine pleuropneumonia and glanders. ^{4/ 11/ 13/ 14/ 15/ 17/}

b. Legal controls

(1) Licensure -- Virtually all of the veterinary trained personnel in Korea at the outset of the war were trained at technical level (two years or less) by the Japanese. At the end of the conflict there ^{was} an influx of Soviet and Chinese veterinarians who assisted in the organization of veterinary services and training. Presumably the training for qualified veterinarians follows a five-year college course and the Soviet or Chinese advisors aided in selection of the best qualified personnel with previous veterinary training for further work and qualification in the bloc countries. ^{4/ 13/ 14/ 15/}

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(2) Quarantine -- Quarantine regulations for import of livestock and livestock products exist, but details are not available. 4/ 13/ 14/ 15/

(3) Inspection -- Little is known regarding specific aspects of sanitary regulations and food inspection. The Central Sanitation Laboratory of the Ministry of Public Health, located in Pyongyang, undoubtedly has a responsibility in this field. 4/ 13/ 14/ 15/

c. Professional medical organization (Veterinary) -- No information regarding veterinary professional organizations is available.

d. Medical research (Veterinary) -- Information relative to veterinary research is meager and superficial. From the evidence available there is no indication of original research. The little work reported as research is more in the nature of investigation of indigenous diseases and application of control methods developed elsewhere; in the Soviet Union, China or Japan. Several laboratories for the study of animal diseases have been established in the post-war period. 2/ 4/ 13/ 14/ 15/ 17/ 20/

f. Emergency medical services (Veterinary) -- No specialized veterinary medical emergency services are known to exist.

2. Military (Veterinary) -- No information regarding military veterinary units is available. Such units undoubtedly exist to care for draft animals utilized by the military services.

E. Medical manpower (Veterinary) -- Personnel engaged in animal health and related activities with varying levels of technical training in prewar Korea numbered approximately 2500. Most of these were trained by the Japanese

for approximately two years as technicians. About half of this number remained in the Republic of Korea at the end of hostilities, and presumably the other half remained in North Korea and are utilized in veterinary functions. Selected individuals have received training by Chinese or Soviet advisors in the country and some few have been sent to institutions in the Soviet bloc areas. A veterinary school associated with the Agricultural College of Wonsan City was established near the end of the war and, in 1955, the school was transferred as the Veterinary College to Kanggye. The Veterinary College operates under a five-year curricular system, apparently patterned after similar institutions in the Soviet bloc countries. 2/ 4/ 5/ 13/ 14/

F. Veterinary facilities

In addition to the veterinary research, biological production and education institutions, a network of veterinary hospitals reportedly exists in every county of North Korea. These installations are designed to provide care for sick animals and to serve as diagnostic stations. Reports indicate laboratory equipment necessary for diagnostic procedures is lacking in many of them. 4/ 11/ 13/ 14/ 15/ 17/ 18/ 20/

G. Veterinary medical supplies and materials

Production of a wide range of biologics to cure or prevent animal diseases has been reported. Reports regarding the efficiency of animal disease control are contradictory, but if the reported increases in livestock production are valid considerable progress has been made in the control of infectious and contagious diseases of animals.

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Antibiotics and pharmaceuticals are evidently available to the veterinary services from industrial sources supplying medical services. However, the use of such medicaments is limited for economic reasons and as a result of the tendency toward preventive rather than curative medicine in respect to animals. 4/ 13/ 14/ 15/ 17/ 18/ 20/

H. Reference data -- Not included in this report.

I. Comments on principal sources

1. Evaluation -- Current reports and information on veterinary medical data are very meager and fragmentary. In some cases, particularly in respect to those emanating from North Korean political propaganda sources, references are often conflicting and misleading. A number of excellent sources prepared prior to World War II provide factual material on diseases, livestock conditions related to environment and pests and parasites. Relating these to current known conditions in the Republic of Korea, it is possible to judge reasonably accurately the significance of animal disease problems currently confronting the veterinary services.

2. List of sources (in order of importance)

- (1) Sysoev, A. A. 1957. Veterinary science in the Korean People's Democratic Republic. Trans. V1333. Veterinariia 34(4):83-86.
- (2) U.S. Department of State. 1959. Animal diseases in South Korea. Foreign Service Desp. 623. Seoul. 6 p. (Unclassified)
- (3) Kobayashi, H. 1945. Parasites and parasitic diseases of Korea. Seoul. 21 p. (Unclassified)
- (4) U. S. Joint Publications Research Service. 1958. Agriculture in North Korea. JPRS 230. Washington, D. C. 25 p. (Unclassified)
- (5) U.S. Joint Publications Research Service. 1958. Agriculture in North Korea. JPRS 757. Washington, D. C. 152 p. (Unclassified)
- (6) U.S. Joint Publications Research Service. 1958. Agrarian reforms in the Asiatic People's Democratic countries. JPRS/DC-376. Washington, D. C. (Unclassified)

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