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NIS 23 - Section 45

Bulgaria

A. General -- The development of veterinary public health and animal disease control services after World War II has made slow progress. Continuing incidence of diseases and parasitic infestations that are normally controlled in many parts of the world play an important part in Bulgaria's chronic shortages of food products of animal origin. Frequent references to food-borne epidemics or significant illnesses among the population indicate that sanitation in food processing or distribution facilities is sub-standard. The shortage of qualified veterinarians is acknowledged by Bulgarian authorities, and recently efforts have been made to accelerate education and training of qualified veterinarians and auxiliary personnel.

Bulgarian veterinarians are relatively isolated except for contacts with colleagues in the Soviet bloc area, but occasionally participate in meetings at the international level. Recent threats of introduction of a new type foot-and-mouth disease (FMD) have led to frontier conferences involving protective measures with Greek and Turkish veterinarians. 2/ 3/ 11/ 22/

B. Environmental factors affecting health

1. Topography and climate -- Bulgaria is predominantly a hilly country, rising from 600 feet at the Danube in the north to about 1800 feet at the base of the Balkan mountain range which transects the country horizontally. South of the Balkan mountains more hilly country, similar in height exists, with the Rhodope mountains rising along the Greek and Yugoslav borders. Numerous river valleys, including that of the great Danube, winding in and out among the hills, at some points form

extensive swamps, particularly during flood seasons. At these periods the swamp and marshy areas provide ideal breeding ground for a number of insect pests troublesome to man and animals. The country, as a whole, suffers periodic droughts which adversely affect crops and reduce availability of locally produced foods. Winters are not severe, except at high altitudes. Low lying areas are hot and humid during the summer months. 23/ 29/

2. Socio-economic pattern -- Bulgaria, at the crossroad of Europe and Asia, has been transversed many times by migrating people and armies. Although migrations of the past no longer exist, Bulgaria is still considered part of the Balkan corridor through which Asian animal diseases may enter and possibly become established in Europe. 22/ 29/

3. Animal and plant life (of veterinary importance)

a. Animal

(2) Flies -- A number of flies, either nuisances or possible disease vectors, have been identified, including a reported 32 species of green and blue blow flies (genuses Calliphora and Lucilia), only a few of which are named in available literature. These are:

Protocalliphora azurea
P. sordila
Pollenia rudis
Phormia spp.
Lucilia spp.
Calliphora erythrocephala
Chrysomya megacephala

In addition to these flies, Musca domestica and Hypoderma bovis are reported.

1/ 2/ 3/ 12/ 22/

(5) Ticks and mites -- Ticks identified include:

Rhipicephalus sanguineus

R. bursa

Dermacentor marginatus

Boophilus calcaratus Birula

Ixodes ricinus Linn.

I. persulcatus

Argus persicus

A. reflexus Fabricus

Ornithodorus lahorensis Neuman

Haemaphysalis concinna Koch

H. inermis Birula

H. otophila Schulze

H. punctata Can. and Franz.

H. sulcata Can. and Franz.

Amblyomma hebraeum

Hyalomma savignyi Gervais

H. plumbeum

H. anatolicum Koch

Mites: Sarcoptes scabiei, Psoroptes communis, P. ovis. Numerous mites, species of the family Gamasidae, are nuisances to animals, particularly poultry. 2/ 3/ 20/ 22/ 25/

(7) Mollusks -- Limnea palustris and Galba truncatula are important intermediate hosts of the flukes Fasciola hepatica and F. gigantica. Ninety-seven species of mollusks, several involved as intermediate hosts for parasitic infections in fish, have been identified in the Black Sea. 2/ 3/ 22/

(8) Worms -- The most important parasitic worms of livestock are:

Dicrocoelium lanceatum

Fasciola hepatica

F. gigantica

Paramphistomum cervi

Dictyocaulus filaria

D. viviparus

Echinococcus granulosus

Taenia solium (intermediate larval stage Cysticercus cellulosae in swine)

Trichinella spiralis

Oesophagostomum dentatum

Ascaris lumbricoides

Moniezia expansa

1/ 2/ 3/ 11/ 22/ 30/

(9) Reptiles

Vipera ammodites Linn.

V. berus Linn.

Natrix natrix Linn.

N. tesselata Laur.

2/ 3/

(10) Rodents

Cittellus-citellus belcanicus - gopher

Silvinius sylvaticus - forest mouse

Apodemus agrarius - field mouse

Microtus arvalis - field vole

(11) Wild animals

Putorius putorius - black polecat

Vulpes vulpes - red fox

2/ 13/

4. Nutrition

b. Food supply and distribution -- The relatively low level of production of food of animal origin is a direct result of low fodder availability. Bulgaria, for many years, has produced only enough fodder or pasture crops to sustain livestock -- never enough to fatten or finish more than a small percentage of its animals. Failure to produce sufficient fodder makes importation of grain for livestock supplementary feeding necessary. Furthermore, the low level of animal nutrition

contributes to the complication of animal diseases, which further reduces output.

During the summer of 1962, Bulgarian authorities announced price increases in basic foodstuffs, including meat, milk and eggs, to combat local shortages. At the same time, a special appeal was made to farmers to utilize every foot of available land for crop and fodder production. A part of recent shortages in animal products stems from two successive seasons of unfavorable weather for pasture and fodder crops.

Collectivization has also adversely affected animal production since, under this system, there is little incentive on the part of farm operators to pay sufficient heed to disease and parasite preventive measures. 12/ 17/ 23/ 24/ 26/ 29/ 30/ 45/

c. Food sanitation, storage, and technology -- Food storage, refrigeration and dairy facilities have been materially expanded in post-World War II years. These plants are designed for regular supply to the metropolitan areas and, aside from the fish refrigeration units of the Black Sea fishing industry, are not designed for long-term bulk storage. In 1960, an inspection system, including laboratory facilities, was ordered set up at the major units. Refrigeration at the retail to consumer level is rare, and the degree of sanitation in meat markets and dairies does not provide adequate insurance against food contamination. There is considerable evidence of rather frequent outbreaks of food poisoning involving several bacterial agents. Outbreaks of trichinosis have also been reported. 2/ 11/ 12/ 13/ 22/ 30/ 37/

C. Diseases

2. Diseases of animals -- The relatively high incidence of a number of animal diseases and parasitic infestations is a major factor in Bulgaria's deficit in animal products. The disease problem is complicated by rather serious shortages of fodder and consequent nutritional deficiencies. Moreover, several of the important diseases

of animals are communicable to man, a fact of which Bulgarian public health and veterinary authorities are cognizant and one with which they are concerned.

a. Prevalent animal diseases

(1) Brucellosis -- Brucellosis in cattle, sheep, goats and possibly swine, is a much more serious disease than is indicated in the official reporting system. Investigative and experimental work repeatedly refers to its seriousness, and there is ample evidence that disease control systems in use do not offer adequate protection to susceptible stock. In addition to Brucella abortus infection in cattle, B. melitensis is relatively common among sheep and goats. The role B. suis plays in swine is not completely understood. Although the incidence of animal infection is not accurately known, this disease, in addition to its adverse affect on livestock production, is an important public health problem, particularly as an occupational disease.

(2) Foot-and-mouth disease -- Foot-and-mouth disease (FMD) has been enzootic in Bulgaria for many years. Vaccination as well as restricted movement of infected or exposed animals have been used as control measures against the disease in the past. However, in years of rising incidence in Europe and during periods of epizootics in Turkey, Bulgarian livestock has suffered similarly. Currently, the South African Type I (SATI) virus has been identified in European Turkey and the western part of Greece. Unusual disease preventive precautions and serious concern of Bulgarian veterinary authorities indicate the spread or imminent threat of spread to the Balkan countries are possibilities that cannot be ignored. However, there is no current official confirmation regarding the types of viruses actually active in the country. At least a part of the Bulgaria-Greek-Turkey frontier has been fenced, and

patrols have been mounted to control movement of animals and farm workers in a five kilometer sector adjacent to the border.

(3) Leptospirosis -- Both virulent and benign leptospira organisms have been isolated from Bulgarian livestock. Several investigations of slaughter animals, as well as tests in livestock herds, dogs and rodents, have revealed a number of leptospira serotypes. Among the more important of these are Leptospira icterohaemorrhagiae, L. canicola, L. autumnalis and L. pomona. The recorded incidence has reached as much as 53 percent in swine and 12.5 percent in cattle. A number of water-borne outbreaks in man have been traced to the vicinity of swine farms.

(4) Hog cholera -- Hog cholera, known as swine pest in Bulgaria, results in considerable losses to the pig industry. Vaccination is rather widely practiced, but infections with high mortality rates occur in spite of such precaution. This is due either to use of ineffective vaccines or over-riding exposure to virulent virus. Within the past two years, the modified live vaccines have been used to a considerable extent in hog cholera affected areas. However, the backbone of Bulgaria's fight to eradicate this disease is still crystal violet or modified crystal violet inactivated vaccine.

(5) Tuberculosis -- Although bovine and porcine tuberculosis are officially reported as occurring sporadically, the incidence of either may be quite high. Very little testing is carried out, and comparative testing to differentiate bovine cases from infection caused by strains of the organism common to other species is apparently neglected. No information is available as to how much bovine infection results from contact with human carriers. Tuberculous cattle which are considered good milk

producers are not slaughtered. Reactor animals retained in herds are theoretically isolated. The effectiveness of this isolation is questionable. Calves from reactor dams are allowed to remain with the dams briefly and are then added to the open herd.

(6) Salmonellosis -- Salmonellosis occurs quite commonly in all classes of livestock. The frequent isolation of Salmonella spp. in food poisoning outbreaks or as contaminants in livestock products attests to its widespread distribution in Bulgaria. Although the specific causative agents of the enteric fevers of cattle, sheep and pigs are only infrequently determined, it appears obvious that salmonellae organisms play an important role. In addition to significant mortality among calves and young pigs caused by enteritis, salmonellae frequently remain in the animal system as inapparent infections, and these animals are thus reservoirs for further outbreaks or they may even play a role as contaminates of milk or other livestock products.

(7) Contagious agalactia -- As in other areas near the Mediterranean, contagious agalactia of sheep and goats is a serious problem. This disease has a sporadic incidence, and clinical cases often develop during periods when other factors contribute to debility. Not only are direct losses often heavy, at times reaching 15 percent, but the secondary effect on young stock from cessation of milk is serious. Bulgarian veterinarians have concentrated heavily on research of this disease and development of vaccines. The causative agent, a pleuro-pneumonia like organism similar to that causing contagious pleuro-pneumonia, Mycoplasma mycoides, can be grown in culture media or egg embryos. Vaccines prepared from such material or from infected milk, brain and udder tissue, are widely used in Bulgaria.

(8) Echinococcosis -- The incidence of echinococcosis in Bulgaria, particularly in sheep, is extraordinarily high. In 1961 hydatid infection was

reported to be 66.5 percent in sheep, 40.8 in cattle and 4.4 in swine. Recently, a campaign to treat dogs for echinococcosis regularly at 4-month intervals has been instituted. The efficiency or results of this control effort are not yet measured.

b. Other animal diseases -- Other important animal diseases in Bulgaria are Q fever, anthrax, trichinosis, Aujeszky's disease, swine erysipelas, Newcastle disease, viral pneumonia of pigs, and rabies. 1/ 2/ 3/ 11/ 12/ 22/ 25/

D. Medical organization and administration (veterinary)

1. Civilian

a. Organization -- Bulgaria's veterinary services, primarily the responsibility of the Ministry of Agriculture and Forestry, is a bureaucratic, complex structure. The intricacy of functional arrangements are ill-suited to an organization of such relatively modest size and scope. Figure 1

Directly under the Ministry of Agriculture is a triple functioning service consisting of, (1) the Central Veterinary Administration, (2) the Veterinary Services to Provinces (Okrug), Counties (Okoliya), Cities and Districts (Rayon), and (3) the State Veterinary Inspectorate. The first two services represent the functional elements for veterinary services maintaining professional control and servicing the various units. Administrative support to units in the field is the responsibility of the provincial or local people's councils. Several ministries or boards at the level of the Ministry of Agriculture maintain specific veterinary units administratively. However, the Central Veterinary Administration has technical and professional authority over these units which are, (1) Milk Inspection, Milk Cooperative Board, (2) Veterinary Education, Ministry of Education and Culture, (3) Meat and Food Inspection, Ministry

of Food Industry, (4) Control of Livestock Transportation, Ministry of Transportation. These three ministries and one board, as well as the Ministries of Health, Defense, Commerce and Interior and the State Insurance Institute contribute members to the Council for Veterinary Matters, which is a technical advisory body responsible to the Ministry of Agriculture. In addition, the Bulgarian Academy of Agricultural Sciences, established in 1961, functions in an advisory capacity to the Ministry of Agriculture and guides and coordinates research in all fields of veterinary activity. This involves work underway at several institutions, the following five being the most significant: (1) Central Veterinary Institute for Infectious and Parasitic Diseases (Tsentralen nauchno-izsledovatelski veterinarno-bakteriologicheski i parazitologicheski instituti), Slaveykov Blvd. No. 15, Sofia (42-41W - 23-19E); (2) Institute for Comparative Pathology of Domestic Animals (Institut po sravnitel noi patologii na domashnie zhivotnye), Georgi Milev District, Sofia; (3) Professor Dr. Georgi Pavlov Higher Veterinary Medical Institute (Vissh veterinarnomeditsinski institut Prof. Dr. Georgi Pavlov), VVMI, Lenin Blvd. No. 55, Sofia; (4) Turnovo Regional Veterinary Institute (Rayonniya veterinary institut, Turnovo), Turnovo (43-04N - 25-39E); and (5) Veterinary Virological Institute (Veterinaren institut po virusologiya), Vasil Petleshkov, Street No. 75, H. Dimiter District, Sofia. Other microbiological institutes under guidance of the Bulgarian Academy of Sciences carry out some veterinary research in addition to research in other scientific fields. The most important of these are: (1) Central Helminthological Laboratory (Tsentralna khelmintologichna laboratoriya), Georgi Milev District, Sofia; (2) Institute for Morphology (Institut po morfologiya), Georgi Milev District, Sofia; (3) Microbiological

Institute of the Bulgarian Academy of Sciences (Mikrobiologicheski institut pri BAN), Georgi Milev District, Sofia.

The Central Veterinary Administration consists of nine divisions: (1) Epizootic Control, (2) Animal Treatment, (3) Parasite Control, (4) Animal Food Products Control, (5) Veterinary Planning and Statistics, (6) Veterinary Supply, (7) Border (Inspection and Quarantine) Control, (8) Refrigerator Plant and Fish Market Inspection, and (9) Sanitary Animal Disposal. It also regulates eleven Veterinary Bacteriological (Microbiological) Institutes or Laboratories: the State Serum Institute, Vratza (43-12N - 23-33E); the State Plant for Veterinary Medicaments (VETPROMSNAB), Sofia; the Institute of Biological Production, Moderno Pregradie, Sofia; and a number of Regional Veterinary Diagnostic Laboratories.

The Veterinary Services to Provinces, Counties or Cities and Districts supervise the Veterinary Supply Stations, Veterinary Hospitals and State Farm (TKZS) Veterinary Services. These are, however, financially and administratively supported by the local People's Councils or the State Farm administration.

About one-half of Bulgaria's 2,000 veterinarians are engaged in some form of work related to public health, primarily in the field of food inspection. Activities of a large proportion of these individuals are, however, on a part-time basis. Qualified veterinarians are considered too few and services are augmented through the use of subprofessional technicians trained for specific tasks.

Veterinary services are completely nationalized and veterinarians are assigned to farms, veterinary installations or services by the Central Veterinary Administration. 10/ 11/ 12/ 13/ 21/ 22/

b. Legal controls

(1) Licensure -- Completion of prescribed veterinary education automatically qualifies personnel for service in the nationalized veterinary services.[10]

(2) Quarantine -- Regulations regarding the importation or exportation of animals or food products of animal origin are specified in the Regulations on Veterinary Affairs, Decree No. 353 of the Council of Ministers June 15, 1953. This Decree covers the broad requirements and responsibilities of veterinary officials, and has been augmented or amended several times to provide special authority for specific disease conditions. The latest of these is a 1962 order related to border control regulations on the Turkish-Greek frontier to protect the country from introduction of South African Type I foot-and-mouth disease.[10] [11] [13] [32] [48]

(3) Inspection -- Legal sanitary controls over foodstuffs are adequate to provide reasonable protection against food-borne diseases, illnesses or parasitic infestations. However, the rather common references in the literature to occurrences of serious human illnesses attributed to food products indicate laxity in mechanics of control.[11] [12] [13] [19] [30]

c. Professional organizations (veterinary) -- As is the case in most socialistic countries of eastern Europe, no professional veterinary associations exists.

d. Medical research (veterinary) -- The level of veterinary research in Bulgaria does not reach standards achieved in many of the northern European countries. However, applied research, receiving major emphasis, approaches that of Poland. It still lags behind that achieved in East Germany, Czechoslovakia or Hungary. The financial support for veterinary research is derived almost totally from government

grants. The only exception is occasional participation by other Soviet bloc countries in research of common interest.

The greatest degree of strength in veterinary research has been the fields of bacteriology and parasitology, two fields wherein lie Bulgaria's most significant problems. 2/ 3/ 11/ 19/ 27/

f. Emergency medical services (veterinary) -- Emergency veterinary service as a formal organization is not known to exist. However, as in any socialistic country, mobilization of veterinary personnel or facilities is feasible as is recently indicated in Bulgaria by its stringent patrol and control over its Turkish-Greek frontier, as a result of the threatened invasion of foot-and-mouth disease. 10/ 11/ 14/ 48/ 49/ 52/

2. Military (veterinary) -- Veterinary services in the armed services are attached to each infantry regiment. One veterinarian, chiefly concerned with food inspection, serves in each medical service section. Veterinarians not identified by veterinary insignia also serve in Border Guard units where they are attached to administrative services. There is evidence of veterinary participation in biological warfare research at the Turnovo Regional Veterinary Institute, Turnovo, but details are not available on the character or extent of the investigations. 14/ 41/ 43/

E. Medical manpower (veterinary) -- The ratio of veterinarians to livestock population in Bulgaria compares favorably to that of many European countries but is still far short of ideal requirements. To augment the services of some 2,000 veterinarians at least 750 technicians (feldshers) are employed. From a numerical standpoint, Bulgaria is better off than neighboring countries, such as Greece and Yugoslavia. In recent years, the number of veterinarians admitted to Bulgaria's single veterinary

school has been augmented to achieve the objective of providing at least one veterinarian for each state livestock farm. In addition to the recently stepped-up formal veterinary training, considerable attention has been given to increased training of auxiliary personnel. 10/ 11/ 21/ 22/ 29/

F. Medical care facilities (veterinary) -- It is the intent of the veterinary services to have veterinary hospitals with facilities for surgery, treatment and confinement of animals in each county. This objective has been partly achieved. To support these units more elaborate hospitals and diagnostic centers are located in each province, and recently inter-county diagnostic centers have also been established. Veterinary authorities have designated more than 750 veterinary districts, more than half of which have specially planned veterinary buildings which serve as offices, supply centers and modest treatment and diagnostic facilities. The remaining districts utilize converted quarters. 10/ 11/ 14/ 19/ 29/

G. Medical supplies and materials (veterinary) -- Bulgaria is essentially self-sufficient in production of veterinary biological preparations and produces the major part of required pharmaceuticals as well. Veterinary supplies and materials not available through national production are obtained from the other Soviet bloc countries, chiefly Czechoslovakia and East Germany.

The major biological production institutions in Bulgaria are the State Veterinary Serum Institute in Vratza and the Institute for Biological Production in Sofia. Virtually all pharmaceuticals produced in the country originate from Vetromsnab, a government plant in Sofia. The distribution of all veterinary products is handled through the Veterinary Services for Provinces, Counties and City communes and Districts, and its Veterinary Supply Stations. The continuing references to rather serious animal

disease problems and definitely prevalent parasitism, indicate that sufficient products do not reach the livestock raisers or that they are not effectively applied. 10/11/14/19/29/32/

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

I. Comments on principal sources

1. Evaluation -- A large volume of source material on livestock production, animal health and veterinary affairs is available. However, much of this material is either in abstract form or exists in the form of translations from Bulgarian publications. A considerable part of the latter is heavily laced with propaganda and, therefore, must be critically evaluated by comparison with bits of information flowing from more reliable sources. Specific data regarding disease incidence, disease preventive operations and volume of veterinary medicaments in use are lacking or may often be conflicting.

2. List of sources (in order of importance)

1) Monatshefte für Veterinär Medizin (Monthly Journal for Veterinary Medicine). Various issues. Leipzig. S. Hirzel. 1956-1961. (Unclassified)

2) U.S. Joint Publications Research Service. "Economic Geography of the People's Republic of Bulgaria." JPRS. NY-547. Washington, D. C. July 8, 1958. (Unclassified)

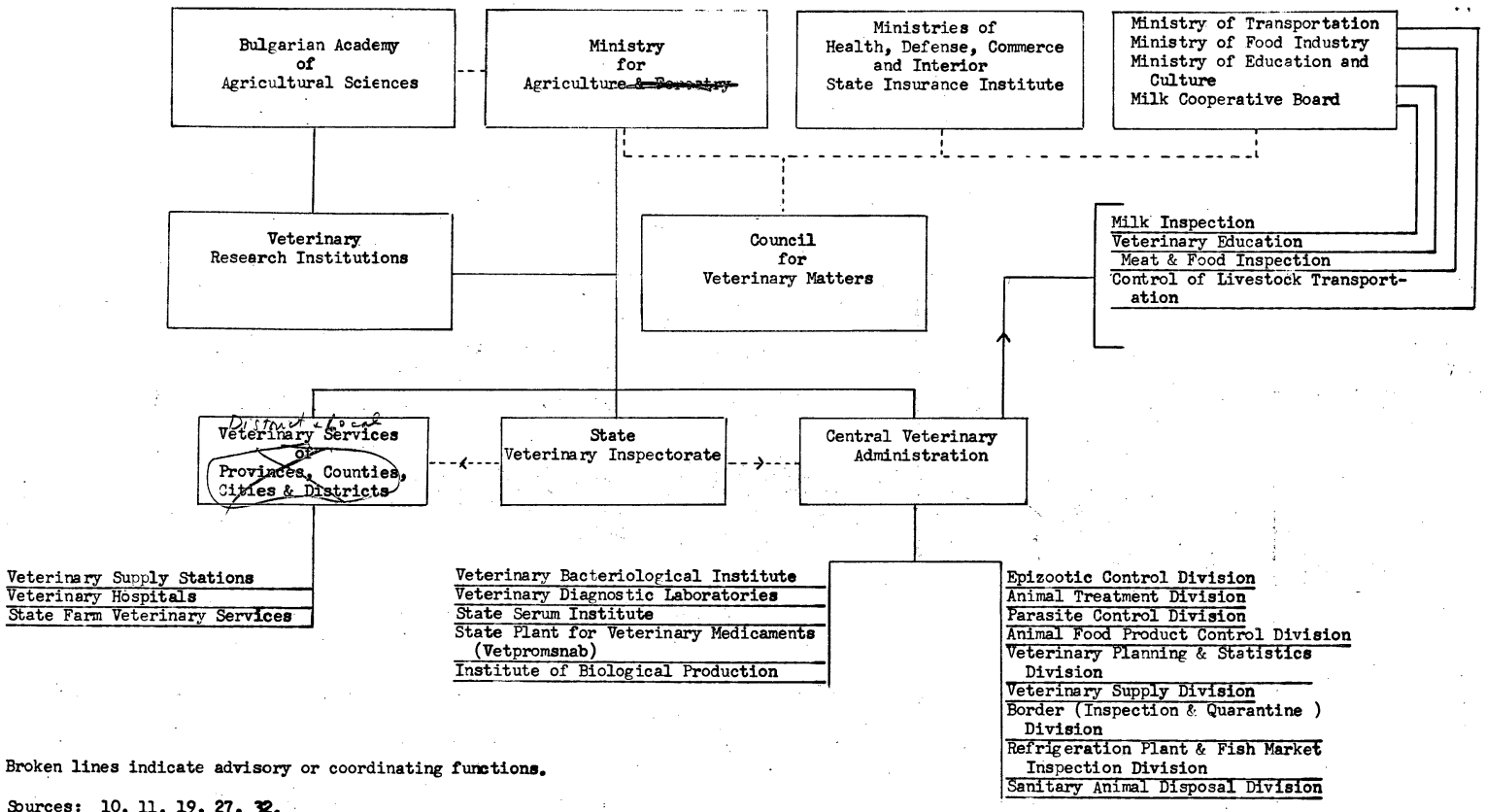
3) Bulgarian Academy of Sciences. "Abstracts of Bulgarian Scientific Literature. Biology and Medicine. 2. Department for Scientific and Technical Information and Documentation." Various issues. Sofia. 1958-1960. (Unclassified)

4) _____. Bulletin de L'Institute de Microbiologie de L'Academie des Sciences de Bulgarie (Bulletin of the Microbiological Institute of the Bulgarian Academy of Sciences). Various issues. Sofia. 1955-1957. (Unclassified)

5) Kalypov, I. M. "Influence of the Great October Socialist Revolution on the Development of Veterinary Affairs in the People's Republic of Bulgaria." Trans. V-1286. Veterinariia 35(5):10-13. Moscow. 1958. (Unclassified)

6) Ministry of Agriculture. "Scientific Investigations, Ministry of Agriculture and Forestry, Research Institute for Veterinary Hygiene and Control of Animal Products." Trans. summaries. Sofia. 1958. (Unclassified)

Figure 1: Organization of Bulgarian Veterinary Services, 1961.



Broken lines indicate advisory or coordinating functions.

Sources: 10, 11, 19, 27, 32.

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