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NIS 11 - Section 15

Sweden

A. General

one of the most advanced European countries in effectively combatting remaining foci of most infections in its animal population. High standards in the performance of veterinary services have contributed significantly to the efficiency of mediah livestock production and to progressive advances in public health conditions.

Swedish livestock producers as well as livestock product processors have long depended on socialised or subsidized veterinary services, and its achievements have been effectively publicised by Swedish veterinary authorities to secure continuing cooperation with necessary policies and actions.

The current sims of the veterinary services are to further reduce the incidence of animal diseases in order to increase production efficiency and to ensure distribution of high quality, wholesome livestock products.

The attitudes of Swedish authorities on measures designed to prevent introduction of disease from outside sources are occasionally considered unduly rigid. Nevertheless, consideration must be given to Sweden's stringent regulations as factors in the unusually low incidence of animal disease or food borne human infection.

Veterinary facilities for routine diagnostic procedures are well distributed

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according to local requirement, and the coordination of these installations with the more elaborate centralized units is excellent. Strength and distribution of staff is rational and adequate.

A highly centralized and authoritative veterinary direction has been responsible for prompt and often bold action to eliminate or control important animal diseases. Adequate funds are available for regular and emergency veterinary programs.

Sweden actively participates in a wide range of international veterinary programs and Swedish veterinarians have made outstanding contributions in providing technical assistance personnel and special training projects for underdeveloped countries through United Mations Specialized Agencies.

B. Environmental factors

- 1. Topography and climate Livestock production and agricultural development are concentrated in the southern and south central portions of Ameden, since the severe climatic conditions impose economic restrictions on the expansion of these industries to northern areas. This concentration of disease susceptible stock in areas proximal or contiguous to other European countries af ected by serious and highly infectious animal diseases requires constant vigilance and prompt veterinary action.
- 2. Socio-economic pattern Veterinary services have been subsidised by the state for many years and Swedish farmers are generally agreeable to the veterinary policies that have obviously contributed to the high level of animal health and productivity. Only occasional isolated opposition to stringent veterinary measures occurs. Veterinary officials have effectively utilised educational and demonstrational

techniques, through extension services and cooperatives, to support firm veterinary regulations.

Agricultural resources for livestock raising are limited in Sweden and, therefore, efficient production is a vital factor in conserving economic resources that would otherwise necessarily be diverted to pay for an expanding requirement of livestock products.

4. Nutrition

- b. Food supply Despite Sweden's highly efficient livestock production, the country remains a net importer of meat and livestock products as a result of an increasing human population and a relatively high rate of meat $\frac{11}{3}\frac{3}{20}\frac{23}{25}$ consumption.
- c. Food sanitation, storage and technology Meat and milk processing, storage plants and sanitary hamiling facilities in Sweden, are modern and adequate. Standards for inspection and supervision of sanitary distribution are among the highest in the world. Incrimination of bacterial contaminated meat products as sources of food borns human disease outbreaks have, in recent years, resulted in the medical professions stimulating veterinary authorities to conduct detailed examination of locally produced and imported meat and mest products. These procedures have caused considerable concern on the part of foreign exporters, mince finding of contaminants ordinarily considered inconsequential have led to, and may in the future cause costly diversion of shipments to other markets or condemnation at Swedish ports.

CON. DELATE

C. Diseases

2. Diseases of animals -- The major animal diseases, particularly those considered important zoonoses, have been virtually eradicated in Sweden. A vigilant and competent veterinary service exercises prompt and stringent action against constant threats of disease re-introduction from nearby European countries or through import of livestock products.

The veterinary services and livestock producers are currently directing attention toward elimination of the few remaining diseases or conditions that either reduce production efficiency or constitute a public health threat to consumers.

a. Prevalent animal diseases

- l. Mastitis Infectious mastitis is one of the major remaining diseases of cattle in Sweden. Veterinary authorities conduct extensive investigations of pooled milk samples and individual animals in order to detect infections early. Regulations define the disposition of infected milk and farmers cooperate with veterinary control programs willingly, in order to bring animals back into full unaffected production. The commonest type organism involved in infectious mastitis in Sweden is Streptosoccus agalactise, and recent bacteriological examinations reveal a significant decrease in the occurrence of the B group, generally considered of bovine origin. This either indicates the effectiveness of concentrated mastitis treatment or, possibly, a measure of success in Sweden's selective breeding program for development of mastitis resistant cattle
 - 2. Deficiency diseases Swedish veterinarians have long recognized

deficiency conditions in all type animals as one of the most serious factors influencing reproduction, optimum physiological function and, consequently, productivity. In most regions measurable nutritive elements in locally produced feeds, as well as soil micro-elements, have been determined in order that producers of livestock may supplement rations or improve soil conditions to alleviate deficiency diseases commonly occurring in specific areas. Since most infectious infertility has been eliminated in Ameden, a great deal of research is devoted to the influence of nutritional deficiency in physiological reproductive failure.

As a result of such studies, Swedish livestock producers have been able to supplement or balance rations and thereby achieve one of the highest livestock fertility rates of any European country.

- 3. Erysipelas Swine erysipelas is the most prevalent infectious swine disease in Sweden. Despite widespread vaccination, outbreaks continue to occur. Swedish veterinarians are currently attempting to produce a vaccine that will provide more durable immunity than the virulent virus and serum method in common use since 1942.
- h. Avian leukosis complex Me in the United States and many other parts of the world, the avian leukosis complex (leukemia) is considered the most economically significant disease problem in poultry production. Since no effective immunizing agents are known for these conditions preventive measures are based on selection of genetically resistant stock and sanitary precautions in 1/3/5/16/
- 5. Salmonellosis Swedish veterinary authorities consider the various strains of salmonella affecting different classes of snimals and poultry

important, not only as causes of animal losses, but also because of their potential danger to human health. Evidently several pathogenic ambonella strains exist more commonly among livestock and as livestock product contaminants in Sweden and nearby northern European countries than in other areas. Concern re
Carding this problem has led to considerable effort to control these infections in animals, intensive public health measures to prevent dissemination of the disease and severe import requirements for animal and poultry products.

- 6. Anthrex -- Vaccination in encotic anthrex areas has generally controlled this disease effectively. Periodic outbreaks, traceable to contaminated imported home seal, have resulted in more detailed examination of feeds and supplements containing such material in recent years.
- 7. Faresitic infestations The paramitic infestations designated most serious by Swedish veterinary authorities are distomatosis in cattle, psoroptic mange in swine, coefficients in poultry, and helminthiasis and distomatosis in sheep. Of these infestations, distomatosis is the most difficult to control and the source of greatest loss in terms of lowered productivity. Cysticercosis in cattle and trichinosis in swine also occur, but inspection is quite detailed and infected carcasses are subject to confermation or measures to render the cysts innocuous.
- 8. Foot-and-mouth disease -- Even though foot-and-mouth disease does not currently occur in Sweden, the veterinary services are constantly alert to the possible introduction through mechanical transmission across the narrow seaways or by contact with animals on the eastern border areas. Then epizootics in Europe become extensive the probability of introduction increases. Sweden handles

initial outbreaks by the "stamping-out method" and imposition of rigorous quarantine of affected premises. In cases of extension of the disease to larger areas, authorities resort to vaccination around the perimeter of infection.

- b. Other im ortant snimal diseases Most other animal diseases are sporadic and of little consequence. Elackley, Johne's disease, swine brucellosis, piglet anexis, and louping ill in sheep, occur infrequently.
- D. Veterinary organization and administration
 - 1. Civilian
- appointed by the Minister of Agriculture, and four counsellors, who are also department heads, exercises strong central control over virtually all veterinary services in Sweden. While the regional, municipal and district veterinary officers operate independently in routine matters, terms of reference laid down by the Board are specifically designed to facilitate effective over-all elimination or control of disease rather than to provide beneficial service to individuals.

 Fig. 1

Veterinary services are subsidized by the national government and, under conditions where payment for services is authorized, fee schedules are established by the Board.

Each department head is charged with specified responsibilities. The General Department regulates veterinary practice, vet rinary appointments, county or district veterinary services, handling of animal diseases, import and expert of animals and certain products, and quarantine measures. Furthermore, this department is responsible for maintaining a veterinary register and carrying out liaison with other government agencies.

The Tuberculosis Department arranges the conduct of tuberculosis and brucellosis eradication programs, and supervises the veterinary activities connected with other notifiable diseases. Veterinary appointments within the department and farm sanitation in connection with diseases also fall under authority of this Department.

The Hygiene Department supervises the Municipal Veterinary Inspection Services, public slaughterhouses, municipal meat inspection centers and the export and import of livestock products. Milk hygiene, as well, is controlled by this agency.

The Administrative Department is concerned with financial, personnel and administrative matters. It is also responsible for preparation and distribution of statuatory regulations and interpretation of legal measures.

The State Veterinary Medical Institute functions directly under authority of the Ministry of Agriculture. It is directed by a Board of six members, with the Director of the Veterinary Board as ex-officio chairman. Other ex-officio members of the Board are the Rector of the Veterinary College and the Director of the Institute. Three members are appointed by the King on advice of the Royal Medical Board, the Royal Board of Agriculture and the Swedish Veterinary Association. The functions of the Institute are to carry out diagnostic work for other official and private organizations, to conduct scientific studies in veterinary medicine and food hygiens, and to produce the required biological and certain pharmaceutical products for disease control and investigation. The Institute is made up of six departments and a secretariat, each dealing with specific problems.

four countries and the principal urban community, Stockholm. District veterinarians and veterinary graduates in the process of acquiring registration,
assigned according to the requirements of the locality, are responsible for the
direct measures dealing with disease control and unimal health. In some instances
veterinarians in this estegory are also required to carry out inspection of food
and food products where municipal services are not regularly provided. District
veterinarians salaries are derived, in part, from state funds. The remainder is
provided by fees fixed by regulations.

Hunicipal veterimins, not ordinarily under state civil service system, are appointed by the Veteriminy Poard after consultation with municipal authorities.

The chief duty of municipal veterimarisms is to exercise control over food products of saimal origin.

Veterinary surreous are appointed by the Veterinary Board to carry out must inspection at Public Maughter-Houses, exceed by sumicipalities, Municipal Heat Inspection Centers, units in smaller communities operating on a parttime basis, and Control Maughter-Houses owned by cooperative associations.

Import and export meet inspection is carried out on a parttime basis by appointment of a veterinarian engaged in some other numicipal or hygiene activity.

Veterinary unrantine Inspectors are appointed on a parttime basis, according to the animal import or export circumstances.

Rural Economy Associations entage a number of veterinarians, but employment is subject to approval of the applicant by the Veterinary Found.

Artificial Insemination Associations, under control of the Veterinary Board, employ a number of veterinarians, including about 50 foreign refugees who have been certified for artificial insemination work.

Only a few veterinarians are engaged in private practice and these are generally in small animal work in the larger cities.

b. Legal controls

- (1) Licensure -- To practice veterinary medicine in Gerden, passing the veterinary surgeons examination and authorization by the Veterinary Board are required. Authorization results in entry to the Veterinary Registry. Registry may be revoked by action of the Veterinary Board's Disciplinary Committee.
- (2) quarantine Animal quarantine regulations are covered by the Epizootic Laws No. 105 and 106 of 12 April 1935. Special Noyal Proclamations are periodically invoked in emergency situations where danger of disease introduction and dissemination occur. Pertain diseases are specified as notifiable under these laws.
- (3) Inspection -- Regulations pertaining to legal control over foodstuffs of animal origin are among the most stringent of European countries and
 permit wide degree of latitude on the part of veterinary inspectors in evaluation
 and disposition of products not meeting requirements. Legal control over sanitary
 inspection of food handling facilities is equally stringent and effectively

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 enforced.
- c. Professional veterinary organizations The Smedish Veterinary Association, founded in 1860, has a definite influence on promoting high standards in the profession and developing or protecting the interest of the veterinary corp.

Constituent and specialized associations are affiliated through representative to the Delegate Assembly, which holds a three-day annual meeting. A committee of five members is frequently consulted by government agencies on veterinary affairs.

Sweden is also a participant in the Nortic Countries Veterinary Association, which publishes a monthly scientific journal and seeks to coordinate veterinary activities among the Scandinavian countries.

d. Veterimary research — Seedish veterinary research is highly efficient and well coordinated throughout the structure of the veterinary services. The trend in research development has been alanted toward investigations that result in effective control or elimination of the most serious indigenous animal diseases. Currently a great deal of emphasis is placed on the serological identification and inter-relation of viral diseases. Tisque culture techniques are being studied, and recently medical and veterinary researchers have identified a bovins virus sero-diagnostically similar to the para-influence 3 virus of man. It has also been discovered that distemper vaccination in animals results in their immunity to measles.

Meat hygiene research is also a strong field of investigation and a great deal of inverest is shown in development of bacteriological techniques to facilitate identification of conteminants.

Hany of the modern techniques for diagnosing and isolating causative agents in livestock infertility, such as vibriosis and trichomonlasis, are the result of Swedish veterinary research.

f. Emergency veterinary services -- Swedish veterinary civilian and military emergency services are well organized and plans for disaster mobilization have

been developed. In cases of outbreaks of seri us epizootic diseases, such as footand-mouth disease, immediate and forceful action has repeatedly prevented widesurread dissemination of the disease and resulted in its eradication.

Swedish veterinary authorities are aware of the implication of bacteriological warfare and have studied the affect of aerosols and aircraft sprays as anti- $\frac{1}{h}\frac{k}{8}\frac{30}{35}\frac{35}{36}$ animal-bacterial spents.

2. Military

The superintendent of the Military Veterinary Corp is responsible directly to the Commander-In-Chief of the Swedish Army. The corp, consisting of 19

Fig. 3

regular officers and a number of reserves, functions in supervising and caring for the health of army animals, maintaining remounts and remount supplies, and inspection of food of smimal origin for the Quartermaster division. A number of the veterinary staff officers are members of the Veterinary Scientific divisory

Committee, which is concerned with special defense matters.

two months per year service, reserves liable for 90-day service in each 3-year period, and reserves liable for \$10 days service each 3-year period. Active service and reserve personnel are posted with the Central Military Command, with military district and regimental commands, and with military schools. Every swedish reterinary surgeon is liable for military service and may be called for active duty even in peacetime to serve the statuatory duty requirement up to the age of \$17 years.

E. Veterinary manpower

There are currently 769 qualified Swedish veterimarians and 50 who have

graduated in other countries authorised for limited practice. This force is considered more than alequate for Swedish veterinary requirements and many veterinarisms are seeking employment in commercial pharmaceutical and biological firms or in foreign countries.

Official veterinariess are assigned to districts or to slaughter establishments, seconding to the requirements in specific localities. The v terinary educational and research inctitates are well staffed by competent teachers and researchers. The following chart indicates the distribution of veterinerians according to types of activities:

State veterinary officers (Veterin ry Board, county and district veterinary officers, burgary holders)	:	326
Army Vaterinary Corps	٠,	. 19
Educational and research institutions		77
Municipal service full-time (municipal veterinary		
officers, meet inspectors, quarantine inspectors) Full-time inspectors at privately-owned, controlled	٠.	37 -
slaughter-houses		. 65
Rural associations veterinarians		10
Private practitioners, including artificial insemina-		20
tion and parttime meat inspection, etc.	•	265
Total.	.	819

The Royal Veterinary College, composed of 15 departments each headed by a professor, offers courses leading to a diploma as a veterinary surgeon. The total period of instruction for this certification is 10 terms (2 per year), but many students spend six to seven years before applying for examination. A dectorate in veterinary science requires a thesis under the same terms applied at universities.

The standards of teaching and research at the Royal Veterinary College are considered equal or superior to those of the better European veterinary colleges. The Skara Institute, now unier the direction of the College, offers opportunities for advanced research in clinical treatment and physiological diseases

C. AT

P. Veterinary facilities

The principal central veterinary facility is the State Veterinary Medical In titute, Stockholm. This Institute is responsible for the detailed diagnostic investigations of material from regional sources, for biological production and for special research problems. The Royal Veterinary College and the Skara Institute carry out clinical investigations and undertake special disease investigations.

Such of the twenty-four county veterinary posts and a few district units have modest Laboratories for routine diagnostic work.

All major slaughter-houses have excellently equipped small laboratories for bacteriological and parasitological investigation.

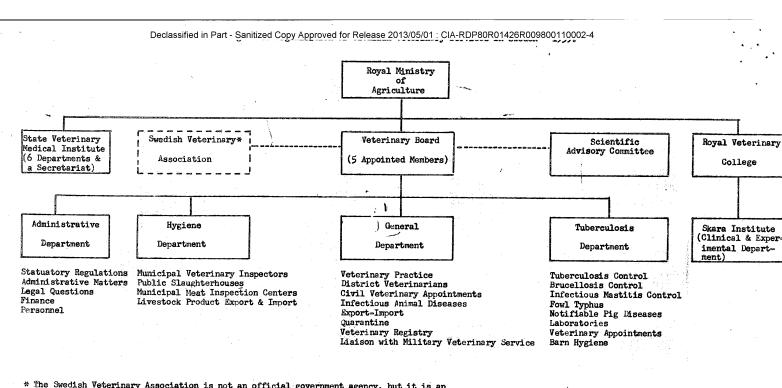
Coordination between regional and central veterinary facilities is highly developed and ambulatory services are adequate.

A few commercial firms producing pharmaceuticals and biologicals have recently augmented facilities for animal disease investigations and production of veterinary medical supplies.

G. Veterinary supplies

The Scrological Department of the State Veterinary Medical Institute produces practically all of the biological supplies required in Sweden. Pharmaceuticals and ambibiotics are produced by commercial concerns and are available to livestock producers either through the official government veterinary offices or through the Rural-Sconomy associations. Veterinary Departments.

H. Seference data No reference data are included in this report.	50X1
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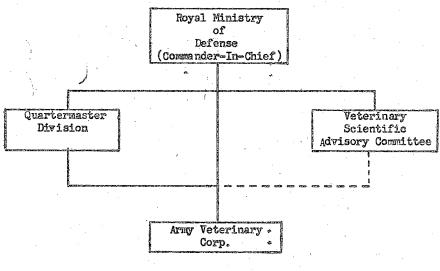


^{*} The Swedish Veterinary Association is not an official government agency, but it is an important advisory body.

Sources: 1/4/

^{1.} Broken connecting lines indicate advisory responsibility.

Figure 3: Army Veterinary Services - Sweden - 1959.



Veterinary Supplies Food Supplies Remount Service Animal Health Liaison Ministry of Agriculture's Veterinary Service

1. Broken connecting lines indicate advisory responsibility.

Sources: 1/4/

