VENEREAL DISEASES PAST AND PRESENT IN NORWAY WITH SPECIAL REFERENCE TO OSLO*†

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The most common venereal disease in Norway at present is gonorrhoea. Since 1950 syphilis has been a very rare disease. A few cases of chancroid (*ulcus molle*) are reported each year, but lymphogranuloma venereum occurs only occasionally. Granuloma venereum (*Donovaniasis*) is practically never seen. By the specific venereal disease legislation of 1947 these diseases are defined as venereal and involve compulsory reporting and compulsory but free or practically free treatment. The physicians order drugs from the pharmacies but the expenses are met by the State. Other diseases which may be spread by sexual intercourse, *i.e.*, non-gonococcal urethritis, are not covered by the law of 1947. The programme against venereal disease is based on the Norwegian Public Health Law of 1860 for the control of communicable diseases, and the specific venereal disease legislation of 1947. Consecutive records of the notifications of venereal diseases since 1876 are available.

NOTIFICATION AND INCIDENCE

In recent years the statistics have been based on weekly numerical reports from physicians and clinics to the local health authorities, which in their turn submit monthly reports to the Director General of the Norwegian health services. The reports from the whole country are collected and thereafter collated by the Central Bureau of Medical Statistics. Since January, 1948, each case of venereal disease has been reported on a special form. Information required concerns residence, date of birth, sex, marital status, occupation, disease (and for syphilis, stage of disease), date of infection, geographical place of infection if the source of infection is located, and the result of microscopical and serological examinations. The name of the patient is revealed only in certain circumstances,

when the special assistance of the Department of Health is required, *e.g.*, contact investigations or failure of the patient to continue treatment or follow-up. Generally, however, the physicians themselves are able to trace, examine, and treat contacts as well as patients.

In Norway all cases of non-infectious late latent syphilis, and all forms of tertiary and congenital syphilis are reported as new cases if they have not been diagnosed previously. A case is classified as early latent syphilis up to and including 4 years after the infection. This manner of reporting must be borne in mind when comparing the Norwegian rates of syphilis with those in other countries. In Denmark the rates include primary and secondary cases and infections acquired only within 12 months. The Swedish rates include primary and secondary syphilis, latent acquired infections of up to 3 years duration, and congenital cases up to 3 years of age only. Thus, it will be seen that Norway includes comparatively more cases of syphilis in its statistics than the other Scandinavian countries. To facilitate the comparison, especially between the Scandinavian capitals, Oslo from 1953 has, therefore, based its venereal statistics only on early syphilis, which comprises primary, secondary, and early latent syphilis up to and including 4 years after infection.

It may be supposed that some physicians do not report their cases and that some give wrong diagnoses, *e.g.*, gonorrhoea instead of non-gonococcal urethritis. These are, however, exceptions and the main part of the medical profession is cooperative. The number of these errors of omission and commission is unknown, but it is reasonable to assume that the percentage is about the same every year. The provision of free drugs for venereal diseases probably stimulates the interest of the physicians in reporting cases, because the number of cases reported and the quantity of drugs ordered can be

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FIG. 1.—Incidence of syphilis per 10,000 population in the whole of Norway, in Oslo alone, and in Norway except Oslo (Haustein, 1926).

checked to some extent. It is believed that the statistics probably give a true reflection of the state of venereal diseases in Norway.

The incidence from 1876 to 1955 shows marked variations. Comparing the graphs for all Norway, for Oslo only, and for Norway except Oslo, analogous fluctuations are seen in all three.

Fig. 1, which is reproduced from Haustein (1926), represents the period 1876 to 1917 and comprises only syphilis, but a graph for gonorrhoea would show similar variations.

To demonstrate the course of venereal disease in Norway since 1933, it may be sufficient to select the years with the highest and lowest rates for gonorrhoea and syphilis and in addition to give the figures for the last 5 years (Table I).

Norway has at present a population of about 3,300,000, of which one-seventh (450,000) live in Oslo, the capital city. Fig. 2 (overleaf) shows the variations in the incidence of venereal disease for Oslo alone for the period 1876 to 1955. This may be taken as representative of the whole country because of the size of the city, and the reliable system of notification, and because the venereal disease situation in the capital corresponds with that of the country as a whole.

CAUSES OF VARIATIONS IN INCIDENCE

What are the causes of the marked variations in the incidence of venereal disease as represented by the four distinct peaks in Fig. 2 (overleaf)? These variations cannot presumably be attributed to

TABLE I
NEW CASES AND RATES PER 10,000 POPULATION

Year	Whole of Norway				Oslo			
	Gonorrhoea		Syphilis		Gonorrhoea		Syphilis	
	No. of Cases	Rate	No. of Cases	Rate	No. of Cases	Rate	No. of Cases	Rate
1933	5,095	17.8	393	1.4	1,708	66	80	2
1939	5,616	19.2	317	1.1	1,729	63	90	3
1940	4,230	14.4	306	1.0	1,378	51	110	4
1943	6,078	20.30	1,977	6.6	1,988	74	733	27
1946	11,053	35.4	1,706	5.5	3,306	117	432	15
1950	2,415	7.4	701	2.1	685	16	145	3
1951	1,947	5.9	477	1.4	576	13	88	2
1952	1,933	5.8	306	0.9	695	16	43	2
1953	1,648	5.0	308	0.9	612	14	39	0.9
1954	1,560	5.0	223	0.7	632	14	24	0.5
1955	1,852*	5.6	199*	0.6	738	16	24	0.5

* Preliminary figures.

FIG. 2.—Rates of syphilis and gonorrhoea in Oslo per 10,000 population for 1876 to 1955.

local accidental circumstances, but that they must be due to more general causes. One of the most important underlying reasons appears to be economic. This was mentioned by Parent-Duchatelet (1857) and Mauriac (1875), but the theory was chiefly established by Haustein (1926), whose work is based on statistics from Norway and Oslo (Christiania). Data published by Almkvist (1927), Gundersen (1939), and for the later years by Gjessing (1945, 1949), support this view. Many of the subjects dealt with in the present paper have recently been treated by Eliot (1955).

In the period 1879 to 1882, the economic conditions were good. They were followed by a crisis in 1887 and 1888. About 1895 there was a period remarkable for reckless speculation, especially pronounced in Oslo, and these boom times were succeeded by a financial crash. During the first world war there were fat times for many neutral states, and among these was Norway. Later on came the lean years. The periods of prosperity and the times of economic depression are reflected in the graphs of incidence of venereal disease. The connexion may be briefly expressed as follows:

During times with rapidly increased income with much money in circulation there is also increased consumption of alcohol, less sexual inhibition, increased promiscuity, and, consequently, increased possibility of the spread of infection. When economic conditions deteriorate the situation is reversed. The peaks in Fig. 2 correspond to good economic periods and the drops to periods of economic depression with lack of money. As a relatively recent example, the decrease of venereal disease after the world comprehensive economic crisis which began in 1929 in the U.S.A. may be mentioned. This theory seems to explain the

variations in Norway, and probably in all the Scandinavian countries, where the economic conditions and other vital factors are perhaps more easy to estimate than in larger countries where conditions are less transparent and where the causes of any fluctuations may, of course, be different.

The last great increase in venereal diseases requires an additional explanation. During the second world war there were in one way "good" economic conditions in Norway, because large quantities of paper bills were printed with consequent abundance of "money", though at the same time commodities, food, etc., were very scarce. Another very significant factor during this period, was the great amount of prostitution which developed amongst Norwegian women as a result of the large number of German troops present. The Germans in Norway were outside the control of the Norwegian health authorities and did not report cases of venereal disease to them. Moreover, the occupation command forbade German citizens to visit Norwegian physicians for treatment of venereal disease. This prohibition had a bad effect, as many Germans were afraid to go to their own doctors because, rightly or wrongly, they feared disciplinary action. Psychological factors which follow wars and catastrophes must also be taken into account. The "doom philosophy" of "eat, drink and be merry for tomorrow we die" readily leads to promiscuity.

PROSTITUTION

Legalized prostitution and brothels were abolished in 1887. There are at present few prostitutes living only on prostitution: most of them have other jobs besides. Since the first world war there has been a gradual change in sexual relationship, from casual connexions to more stable sexual companionships which very often result in marriage. It is impossible to give exact figures to elucidate this matter which is of importance in the epidemiology of venereal disease.

DETECTION OF SOURCES

Figures are available since 1948, but the statistics for the whole of Norway have not yet been worked out by the National Department of Social Affairs. In Oslo the sources of venereal infection were detected in 50 per cent. of cases in 1953, in 49 per cent. in 1954, and in 47 per cent. in 1955. (Cases infected abroad and in Norway outside Oslo are not included, having arisen from sources (contacts) living in and belonging to another community upon which falls the onus of detection within its own territory.)

The increased practice of routine examination, including serologic tests for syphilis of industrial workers and the serological examination of pregnant women, has led to the discovery of cases of latent syphilis.

IMPORTATION OF INFECTION

Importation from foreign countries is a factor of significance in the epidemiology of venereal disease. The statistics from Oslo demonstrate that 14 to 17 per cent. of all reported cases were infected abroad in the period 1950 to 1955. At present there are about 47,000 merchant seamen on Norwegian vessels, of whom the majority (about 35,000 Norwegians and 7,000 foreigners) sail in foreign waters. About 15 per cent. of all reported cases in Oslo in the years 1954 and 1955 were seamen. But it must be kept in mind that Oslo is a seaport, and that both the rate of importation and the percentage of infected sailors will probably be less in Norway as a whole.

PENICILLIN THERAPY AND EPIDEMIOLOGICAL (PROPHYLACTIC) USE OF PENICILLIN

It will be noticed that gonorrhoea has diminished since 1946. This is not, as previously, due to an aggravation in economic conditions but chiefly to the great efficacy of penicillin. It is also believed that the incidence of syphilis has been favourably influenced by penicillin therapy. Since 1946 the Board of Health Clinic in Oslo has given penicillin with the patient's consent to alleged female sources or contacts of gonorrhoea to stop further spread of the disease, even if gonococci were not demonstrated. It is thought that this procedure has contributed much to limiting the spread of gonococcal infection, and this course of action has been widely followed in Norway. It is generally advised that males should not be treated merely on suspicion of gonorrhoea.

Prophylactic penicillin in cases only suspected of syphilis or in persons exposed to syphilitic infection is considered neither necessary nor advisable in Norway where syphilis is now a rarity.

INCIDENCE OF NON-GONOCOCCAL URETHRITIS

Since the decrease of gonorrhoea, non-gonococcal urethritis has become more noticeable, but it is difficult to decide whether this increase is real. The figures from the Board of Health Clinic in Oslo are perhaps too small to permit definite conclusions, but in fact they do not indicate a rise in non-gonococcal urethritis. The following statistics comprise only male patients suffering from gonorrhoea and primary non-gonococcal urethritis, *i.e.*

urethritis not succeeding or in connexion with gonorrhoea (Table II).

It will be observed that during the years 1951 to 1955 both the total number of patients and the number of those with non-gonococcal urethritis have been approximately constant. The non-gonococcal urethritis cases comprised only between 13.2 and 17.5 per cent. of all cases.

TABLE II
CASES OF GONORRHOEA AND NON-GONOCOCCAL URETHRITIS IN RELATION TO MALE PATIENTS AT THE BOARD OF HEALTH CLINIC, OSLO

Year	Total No. of Patients	Gonorrhoea	Non-Gonococcal Urethritis
1951	483	141	72
1952	500	179	66
1953	525	164	73
1954	429	155	76
1955	418	192	72

SUMMARY

(1) The notification system for venereal diseases in Norway (population *circa* 3,300,000) is described and its accuracy is discussed.

(2) The causes of the remarkable fluctuations in the incidence of venereal disease are considered. The most prominent factor until 1946 has probably been economic; in times of prosperity venereal disease increases and in times of financial depression venereal disease declines. The influence of the second world war and of the German occupation is noted.

(3) The introduction of penicillin has changed the "natural" epidemiology of gonorrhoea. Since 1946 there has been a remarkable reduction of cases in spite of relatively continuous good economic conditions.

(4) Legalized prostitution was abolished in 1887. Since the first world war there has been a gradual change from casual, promiscuous connexions to more stable sexual companionship. Very few women make their living by prostitution alone.

(5) Importation of infection from foreign countries plays a large part in Norway. In Oslo, which is a seaport of about 450,000 inhabitants, cases due to foreign contacts varied between 14 to 17 per cent. in the last 6 years (1950 to 1955). It is considered that the percentage of importation is less in Norway as a whole than in Oslo.

(6) In the years 1954 and 1955 about 15 per cent. of all reported cases of venereal disease in Oslo were seamen.

(7) In Oslo the detection of sources of venereal disease varied between 47 and 50 per cent. in the last

3 years (1953 to 1955). (Cases infected abroad or in Norway outside Oslo are not included.)

(8) Figures concerning the importation of venereal disease and the detection of sources for Norway as a whole are not yet available.

(9) The Department of venereal disease of the Board of Health in Oslo has since 1946 persuaded alleged female contacts of cases of gonorrhoea to be treated with penicillin even if gonococci were not demonstrated. This course of action has been widely adopted in Norway and is considered to have limited the spread of gonococcal infection.

(10) In Norway the rate of syphilis per 10,000 population has diminished from 6.6 in 1943 to 0.6 in 1955. In Oslo the rate for the same years is 27 and 0.5 per 10,000. (The rates of syphilis in Norway are calculated on the basis of all reported cases of syphilis, including late latent and tertiary forms. In Oslo from 1953, however, the rates of syphilis refer only to early syphilis.)

(11) The rate of gonorrhoea per 10,000 population has decreased in Norway from 35.4 in 1946 to 5.6 in 1955. In Oslo the rates of gonorrhoea for the corresponding years are 117 and 16. There seems to be a temporary pause in the decline of gonorrhoea and the number of syphilis cases is now so small that it is perhaps unreasonable to expect further reduction.

(12) The present state in regard to venereal diseases in Norway is regarded as satisfactory.

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