Summary

The study was based on The National Leprosy Registry of Norway, established in 1856 and in operation until the last patients were registered in the 1950s. Information on all 8,231 patients was transferred to a computer file, which, together with the original sources, formed the basis for an evaluation of the material. Diagnostic criteria with respect to the disease and the type of disease, and principles as well as practical aspects of case finding in the field, substantiated the Leprosy Registry as a satisfactory basis for an epidemiological study.

Leprosy was frequent in West and North Norway and particularly in the coastal health districts. The disease was infrequent in towns and was almost unknown in East Norway. The top of the endemic was reached in the middle of the 19th century with prevalence (per 10,000) and incidence (per 100,000 per year) rates of 16·7 and 16·6 for the whole country (mean population: 1,984,791), 101·1 and 97·5 for the top frequency county (mean population: 87,074), and 253·0 and 318·3 for the top frequency district (mean population: 2,609).

Sex ratio, based on age-adjusted sex-specific incidence rates of patients taken ill during the observation period 1851–1920, was 142·6. Sex ratio was highest in the age group 30–49 years (187·1) and increased from the first decade of the observation period (136·4) to the last (160·3). Highest average annual incidence rates were found in the age group 15–29 years (13·5) in females, and in the age group 30–49 years (19·9) in males. Mean age at onset by year of *onset* in males and females increased through the observation period from 33·0 and 32·9 to 45·9 and 43·9 respectively, with a total mean of 34·3 and 33·0 in males and females. Mean age at onset by year of *birth* in males and females descreased through the observation period from 23·1 and 22·9 for patients born 1841–50, to 15·1 and 10·7 for patients born 1891–1900. The relative frequency of lepromatous cases was 53·8%. In the age group 25–60 years, lepromatous cases were more frequent in males than in females. In the top frequency health district, compared with the low frequency areas, mean age at onset and sex ratio were low, while the relative frequency of lepromatous cases was high.

The association between mean age at onset, sex ratio and relative frequency of lepromatous cases on one hand, and *level* of incidence rates on the other was high ($r = 0{\cdot}74$), and so was the association between the same variables and *time trend* in incidence rates ($r = 0{\cdot}70$). A high association was also found to exist

between degree of *isolation* and relative fall in incidence rates when prevalence rates exceeded 15·0 ($r = 0{\cdot}81$).

In *families*, relative frequency of lepromatous cases increased by number of patients per family. In sibships, patients tended to be more concordant with respect to the type than expected, except in sibships of patients taken ill after the age of 30 years. Secondary attack rate among spouses was 5·3%. Degree of concordance with respect to type in spouses did not differ from what was expected.

In the top frequency health district, the occurrence of leprosy at *farm level* was associated with a low production of oats and milk, and favourable conditions in the surroundings for growth of mycobacteria in sphagnum vegetation.