

NEWS AND VIEWS

How to Measure Populations

THERE is a large store of information for population geneticists among the remaining primitive communities of the world. They are to be found in the Arctic, among the Eskimos; in South America, where there are at least 200 groups such as the Kayapo of Brazil or the Guayaki of Paraguay; in Africa; and in Asia and Australasia. Because of the way of life of these groups, which has changed very little during the greater part of human existence, careful study can provide some useful facts about the selective forces which have been active during human evolution. Some of these communities are likely soon to become extinct, or are being changed by their contact with more advanced societies. There is therefore an urgent need to collect as much information as possible as quickly as possible.

This problem has been considered by the WHO Scientific Group on Research on Human Genetics which has produced a report (*WHO Tech. Rep.*, No. 387, 4s.) giving recommendations for the design of comprehensive studies to determine the genetic structure of populations in relation to a variety of ecological and social factors. The first requirement, whenever possible, is a full census to give information about reproductive behaviour, fertility, mortality and movement within the population. Thorough medical and dental surveys can reveal causes of mortality and morbidity and the presence of genetic disorders.

Serological and biochemical variations can be detected by tests on red cells, serum, saliva and urine. Some tests are limited by a shortage of reagents; antisera for tests of blood group antigens are available only as sera from people who have become immune to the antigens in question, and consequently there is a very limited world supply. The report recommends that research directed to increasing the supply of antisera from immunized animals and plant extracts should be encouraged.

A complete record of bodily dimensions should be made for each individual in a community; although the data cannot yet be analysed genetically in detail, such information is often interesting to nutritionists or anthropologists. Pigmentation of skin, hair and eyes should be recorded, although for most of the populations eye colour is not likely to be significant. Finger and palm prints are recommended to be collected, and in some cases also prints of toes and soles of feet. Physiological and behavioural investigations will be possible in some cases, but the nature of the studies made must depend on the facilities and expert advice available.

Genetic investigation needs to be accompanied by a detailed ecological study, which will, of course vary in scope according to the resources available. Climatological studies, such as meteorological observations,

soil survey and cartography, are recommended; and so are ethnobiological surveys of cultivated plants and animals, medicinal plants, psychoactive drugs, vegetable body paints and so on. Archaeological data, oral tradition and historical records are important for any understanding of the demographic and genetic constitution of a community and its history. This information can be collected from skeletal, dental and other remains and by direct contact with the subjects studied. In such cases, as during all investigations of this type, research teams are advised to respect the privacy and dignity of individuals, and to give them adequate recompense for their assistance. The researchers can feel justified in their activities by the fact that the populations which they study will all benefit from the provision of medical, dental and related services.

Locust Plague Spreads

A PLAGUE of desert locusts is threatening countries on both sides of the Red Sea. The Desert Locust Information Service in London has received more than 100 reports of swarms in the last month, mostly from Ethiopia, Somaliland and Saudi Arabia.

The desert locust exists in a solitary and a gregarious form. Favourable climatic conditions and increase in vegetation can increase the numbers of solitary locusts which, under the stimuli of crowding, make the transition to the gregarious form. Gregarious locusts, which differ in coloration as well as behaviour, continue to breed in this form in subsequent generations.

The Anti-Locust Research Centre forecast the likelihood of a locust plague in November last year and the countries concerned were warned of the danger through the FAO. During the winter the locusts bred in the Yemen and Saudi Arabia; swarms from this breeding moved into central Saudi Arabia in March and April, and within the next three to four weeks their progeny are expected to reach the Wadi Hadramaut in south Yemen and to infect other areas of Saudi Arabia. Swarms may also cross the Red Sea into eastern Africa.

The FAO has granted \$285,000 to supplement the control measures of the countries concerned, but preventive measures are unlikely to be successful at this stage. Once a locust plague has passed a critical size it cannot be stopped, and the present outbreak may last for a period of years. At its worst it could spread over the whole range of the desert locust's natural habitat, which extends from the Atlantic coast of Africa to western India and from southern Russia in the north to Tanzania in the south. The last plague of desert locusts lasted from 1948 to 1963. In the past, locust control measures have been successful in curbing the worst excesses of a plague, and possibly—though even this is uncertain—in shortening its lifetime.