

EPIDEMIOLOGY IN NICARAGUA

SIR,—We read the paper by Dr Siegel and colleagues (June 29, p 1492) with great interest and some surprise. We are a group of doctors who are working or have been working in Nicaragua since 1979. We adopted the expression "epidemiology of aggression" some time ago when, in analysing data on health activities, we found unexpected results ascribable to the aggression which was so prevalent in Nicaragua, especially in Region VI. We first used the expression at a seminar on preventive medicine in La Cartuja, in December, 1982, during an evaluation of malaria and leishmaniasis. It covers not just the immediate consequences of war, but also focuses on variations in the clinical and epidemiological features of diseases.

As members of a regional study group on leishmaniasis we paid special attention to variations in the pattern of this disease. Before 1979 leishmaniasis was known to exist in Nicaragua but it was not reported to the World Health Organisation. With the institution of SNUS (Nicaragua's national unified health system) reported cases rapidly increased,¹ and leishmaniasis came to rank fifth among all notified infectious diseases. Our group was formed in 1982 and conceived a field project to study the clinical and epidemiological patterns of Nicaraguan leishmaniasis. The first activity in the field, a study of the prevalence and characteristics of leishmaniasis, including immunological response and identification of strains, began in the village of Rancho Grande. This study was brutally interrupted, 24 hours after it started, by an attack by "contras" in which several people were killed, including Dr Pierre Grosjean, one of two European volunteer physicians.

One aspect of the epidemiology of aggression is the impossibility of obtaining basic data. Cases registered in the region progressively increased from 1980 (143 cases) to 1982 (2107): since 1982, with the intensified war activities, the number of notified cases has fallen to 1154 in 1983 and 806 in 1984. This decrease can be attributed to reduced access to health services, destruction of health facilities, reduced numbers of health workers (due to mobilisation for defence), and the increased workload of remaining staff. All these are direct consequences of war, and they are prominent in the northern regions of the country, where aggression and leishmaniasis coincide "epidemiologically".

A more detailed analysis would probably reveal a true increase in the incidence of the disease, and we have seen a more extended ethnic and geographical distribution of leishmaniasis (imported cases in non-endemic areas). Non-immune people have the clinical manifestations when they enter, in troop movements, the natural environment of leishmaniasis.² This is reflected in the age-sex distribution: the significantly high incidence usually seen in under-5s has shifted to appear in males aged 15-30 years.³ Furthermore people formerly living in endemic areas often resettle, because of the war, in non-endemic areas, resulting in the first appearance of the

disease in those zones. These movements of civilians and troops and planned mass resettlements inside and outside the endemic areas are a serious cause of concern.

We join Siegel and colleagues in their call for health workers to speak out against this war and to contribute further information to improve our understanding of the consequences of aggression.

Regional Leishmaniasis Group,
Apartado 154,
Region VI,
Matagalpa, Nicaragua

ROSELLA MORELLI
EDUARDO MISSONI
MARIA FELISA DE SOLAN

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