

EPIDEMIOLOGY OF OPHIDIC ACCIDENTS

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Venomous Brazilian snakes belong to four genera: *Bothrops*, *Crotalus*, *Lachesis* and *Micrurus*. *Bothrops* and *Micrurus* occur in the whole national territory, *Lachesis* in humid areas, in the forest zone and the Amazonian Region, whilst, in contrast *Crotalus* is not found in these regions and the littoral, preferring dry areas.^{2,3}

At the beginning of this century, Vital Brazil, founder and Director of the Institute Butantan, called attention to the importance of ophidic accidents as a Public Health problem. The number of accidents were then evaluated as 19,200 each year, being principally due to the "jararaca" (*Bothrops*)¹. For the year 1987, 21,463 cases, including 123 deaths were notified to the Department of Health. The incidence calculated for Brazil was 15.5/100,000 inhabitants and the death-rate of 0.6% showed a variation within the macroregions from 0.3% (Southeast) to 2.1% (North). Of the 20,884 notifications of accidents received from June 1986 to December 1987 that included information on the genus of the snake, 88.3% were caused by *Bothrops*, 8.3% by *Crotalus*, 2.7% by *Lachesis* and 0.7% by *Micrurus*. The greater number of deaths caused by snakes of the genus *Bothrops* followed by *Crotalus*, may be due to the frequency of their presence, in as much as the deadliness of bothropic accidents (0.5%) is less than that of crotalic ones (3.3%)⁶.

In the State of São Paulo, for the years 1986, 1987 and 1988, 6,308 accidents were notified (incidence of 6.8/100,000 inhabitants) and of 4,685 notifications with reference to the genus of the snake, 85.3% were by *Bothrops*, 13.6% by *Crotalus* and 1.1% by *Micrurus*. Lethality was 0.3%.¹¹

Accidents depend on the interrelationship between snakes, environment and man. Bites by *Bothrops* and *Crotalus*, occur on the inferior limbs in 75%⁴ and 71% of the cases respectively. Snakes of the genus *Micrurus* are of subterranean habit² and in general bites are on the hand as a result of handling.⁸ Venomous snakes are predominantly nocturnal in habit,² including *Bothrops jararaca*.¹³ However accidents occur more frequently during daytime⁹ the time

of man's highest activity. Moreover, bites mostly occur in the hot months of the year,¹² when the snakes are more active¹³ and within the rural zone¹ where agriculture is not mechanized. Other factors may contribute to the incidence of accidents. Human habitation may lead to the proliferation of rodents, thus attracting the snakes². Extermination of non venomous snakes may eliminate the natural predators as well as lessen the competition for food and thus lead to an increase in the number of venomous snakes. Due to social, economic, cultural and climatic conditions, the rural labourer usually works without adequate protective clothing.^{1,5}

Among the recommended measures for the prevention of accidents,¹⁵ is the use during the work in the field of long-leg boots or puttees, and gloves of leather shavings. A simple boot that covers the ankle may prevent about 60% of the accidents and puttees, another 10%. However, in field labourer using long-leg boots or puttees, accidents tend to be the most severe, being frequently caused by snakes of great dimensions.^{5,6,10}

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