VENOMOUS SNAKES AND SNAKE BITE ACCIDENTS IN PANAMA*

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Since 1929, in association with Dr. Thomas Barbour of Harvard and other workers, I have been carrying out a census of snakes in the valleys of the Tuira, Chagres and Santa Maria rivers of Panama and on the plains east of Panama City. In these areas, a total catch of 3,457 snakes was made from January, 1929 to September, 1934. Of this number, 836 or 24.1 per cent were venomous snakes. During the capture of these snakes, no one was bitten.

According to this census, three species of Bothrops - fer de lance, hog nose viper, and horned palm viper are responsible for 83.6 per cent of hazardous snake bites. The victims of these bites can be treated with Bothropic antivenin. Other venomous snakes included in the catch were 31 bushmasters, 103 coral snakes and 3 sea snakes. The bushmaster and the coral snake rarely cause accidents, but if they do, specific antivenins are required.

Hospital and dispensary records in Panama seldom correctly reflect the true incidence of snake bite accidents for the following reasons:

1. The person who receives the bite is usually alone and is at a remote distance from medical assistance. No official report is rendered.

2. Many poisonous snake bite accidents are not followed by serious results. Most poisonous snakes are nocturnal in their habits, and most snake bite accidents occur in the daytime and are caused by a snake that is so full of food that it cannot escape the pedestrian's foot. Such a snake has emptied almost all its venom into the animal it killed for its food during the night, and therefore a non-lethal bite is delivered. From fourteen to sixteen days are required for a fer de lance to regenerate a maximum quantity of venom after swallowing a rat. This fact has been demonstrated by observations at the serpentarium.

3. The accident because of which the patient entered the hospital may not have been caused by a bite from a poisonous snake. What is thought to be a snake bite may prove to be an injury due to some other cause. I have seen two such instances in which the lesion was due to thorns.

4. Specific treatment for snake bite has been available for only

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a few years, and most patients who are the victims of such accidents are taken to Indian doctors and curanderos who live nearby.

5. Most physicians find themselves confronted with two important obstacles in their efforts to cope with the few patients who report for treatment for snake bite. The patient does not know what species of snake bit him, and if by chance the snake was killed and brought in with the patient, the physician very often is unable to identify it and thus is unable to administer the specific antivenin.

The fer de lance strikes from an S-like position with the head about two or three inches above the ground. Of 104 snake bites, 83 were on the feet and ankle, or on hands and wrists, the latter being received when the patient was in a crouching position with his hands on the ground.

The anatomical distribution of 104 snake bites investigated in this survey was in the following order:

Upper Extremities		*Lower Extremities*	
Fingers	33	Toes	7
Hand	10	Foot	17
Wrist	5	Ankle	11
Forearm	5	Leg	12
Shoulder	1	Thigh	3
Total	54	Total	50

The mortality from snake bite was as follows:

Year	Number of Cases Recorded	Deaths	Fatality Rate Per Cent
1927	19	1	5.26
1928	46	4	8.70
1929	39	2	5.13
Total	104	7	6.73

Injury from snake bite does not occur as often as might be expected considering the number of poisonous snakes counted in this census, and serious accidents resulting in death are rare. In fact, deaths from snake bite in Panama are almost as rare as deaths caused by lightning.