1. Contact of saliva with the unbroken skin anywhere on the body, including face or mouth
2. Contact of saliva with preexistent wound already scabbed over
3. For tooth wounds through clothing which is not torn
4. Handling or petting the suspected animal but not bitten
5. Handling objects contaminated with saliva
6. Drinking the milk of rabid cows or goats
7. If the biting animal is still alive and normal one week after biting
8. Merely to satisfy the anxiety of parents or family but otherwise not indicated
9. For persons previously treated, the vaccine retreatment, if used at all, should be limited to not more than six doses

Not all situations of human exposure will fall in the categories as herein outlined, nor will the physician be able to cope successfully with every case of anxiety complex. But he should bear in mind constantly that antirabic vaccine of itself can cause serious complications and therefore that it should not be used unnecessarily.

Rabies in the Americas

BENJAMIN D. BLOOD, Chief, Veterinary Public Health Section, Pan American Sanitary Bureau *

Rabies is a zoonosis which is widespread in the Americas, and emergency control measures frequently are necessary to cope with outbreaks. The disease recognizes no political boundaries, nor is it subject to terrestrial or climatic influences. Rabies is reported from the frigid regions of the Arctic to the sultry atmosphere of the Tropics; in the congested quarters of Chicago, Rio de Janeiro, Lima, Bogotá, and Mexico City, it exacts its toll. Uncounted hundreds of persons die of rabies each year in the Americas, while thousands of others go through the ordeal of multiple prophylactic injections of vaccine after exposure. It should be added that considerable funds are allocated annually from public health budgets to cover the cost of human antirabies treatment. An indication of the magnitude of this item may be seen by the fact that in Mexico alone from 80 to 100 liters of human rabies vaccine are used monthly.

Rabies is not only a problem of public health, it is also a very important economic problem in many areas of Latin America. Large numbers of cattle and other livestock die each year of paralytic rabies, sometimes diagnosed properly but usually simply called "paralysis." The disease is known to have been prevalent in Mexico for at least 40 years and has caused tremendous losses of livestock (1). It has persisted in Brazil, and at times, rabies epizootics have claimed 60 percent of the cattle in some districts of the states of Matto Grosso and Santa Catarina. In Paraguay, it has existed for a number of years, with an attack rate (and corresponding death rate) of 50 percent of the cattle in some areas. Livestock populations of Bolivia, Colombia, and Venezuela also are attacked by this disease. A fatal paralytic bovine disease is known to have been widespread in Central America for several years; laboratory diagnosis made in 1950 at the CDC Rabies Laboratory, Montgomery, Ala., on material submitted from the Republic of Honduras, confirmed the disease as rabies.

Paralytic bovine rabies, known also as derriengue or mal de caderas (literally, "sickness of hips"), is transmitted by the bites of blood-lapping bats (genus *Desmodus*). Although bat-transmitted rabies is primarily a disease of livestock, it can involve the human population. Eighty-nine human deaths resulted from an outbreak of rabies, with the bat as proven vector, in the island of Trinidad. Subsequent anti-bat measures employed there have demonstrated the effectiveness of elimination

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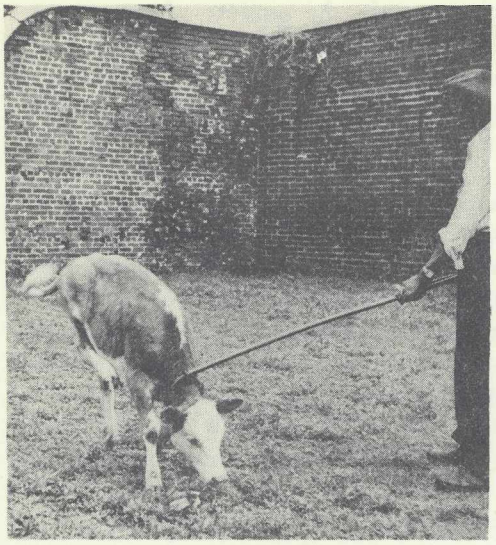
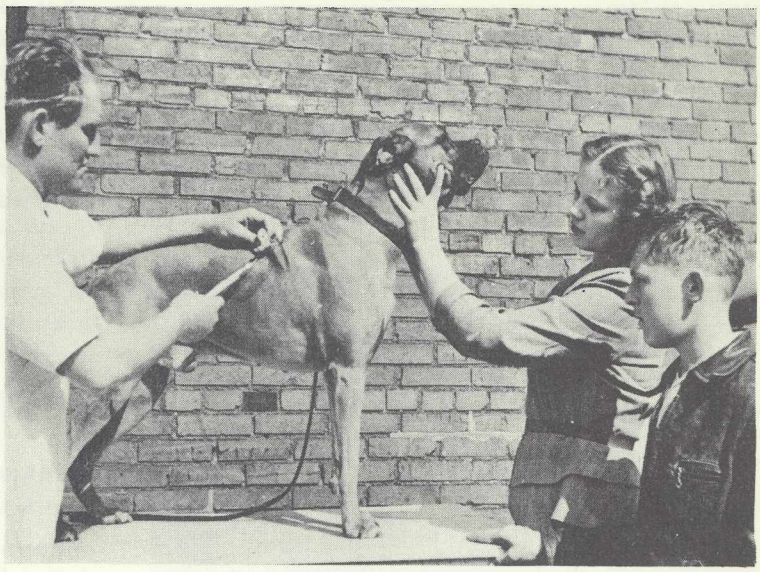


Photo by Memphis-Shelby County Health Department

Rabies in cattle and other livestock causes staggering economic losses in the Nation. Above is a rabid calf just before paralysis and death.

Canine vaccination, when properly integrated in an over-all control program, serves as an essential tool in the fight against rabies.

Photo by Memphis-Shelby County Health Department



of that vector of rabies.

INTER-AMERICAN RABIES CONTROL

Various communities have demonstrated very effective rabies control programs, yet it is often true that neighboring communities have ineffective programs or none at all. This inconsistency allows the extension or reintroduction of the disease over wide areas. Where one State employs a certain type of control procedure, the State to the north of it employs another system which conflicts with the strategy and tactics of its neighbor, while the State to the west may have no planned program at all. Antirabies measures must be integrated and coordinated, whether such measures are taken by townships or nations. The rabid animal respects no political boundary line, but is driven by pathological impulse to roam for great distances and spread his disease from one area to another.

The Mexico-United States Antirabies Program was initiated as a result of the agreement signed in Nogales (1949) by health authorities of the two Nations. Since that time, the tempo of the antirabies campaigns in the southwestern United States and in northern Mexico has been increased greatly. Facilities for modern laboratory diagnosis have been provided in areas where none were available; canine vaccination programs are being completed in selected localities; wildlife control services have been established and are operating where none previously had existed. The results of these activities cannot be measured yet, but there can be little doubt of their ultimate effectiveness.

The international aspects of rabies control also have been emphasized in other parts of the Americas. Pan American Sanitary Agreements, between Argentina, Brazil, Paraguay, and Uruguay (1948), and between Chile and Argentina (1948), both make specific provisions for concerted measures against this disease. These agreements provide a firm basis for definitive action.

The most recent international development in rabies control in the Americas was the Caribbean Rabies Conference, which was sponsored by the Pan American Sanitary Bureau in Kingston, Jamaica, in August 1950. Delegates from insular areas of the Caribbean formulated recommendations for concerted antirabies measures between their respective governments.

REFERENCE

(1) Johnson, H. N.: Derriengue. Vampire bat rabies in Mexico. Am. J. Hyg. 47, 189-204 (1948).