125 (1707)

Inoculation of alastrim or West Indian smallpox.

By J. P. LEAKE and J. N. FORCE.

[*From the Hygienic Laboratory, U. S. Public Health Service, Washington, D. C.*]

For about twenty years there has been observed in tropical and subtropical America an eruptive disease of very low mortality, the identity of which with smallpox has been a subject of question, especially since previous epidemics of smallpox in these regions have been attended with high mortality. This disease outside the United States has been variously termed alastrim, varioloid varicella, and kaffir pox. It has been asserted that a point of difference between this disease and true smallpox was the resistance of lower animals to inoculation; no positive result from inoculation with West Indian or South American strains has been reported in any of the available literature, though Aragao[1] described the development of Guarnieri bodies in the cornea of rabbits inoculated with this disease.

Through Professor W. G. MacCallum, of Johns Hopkins Medical School, pustule contents preserved in 0.5 per cent. phenol at a low temperature for several months, were obtained from two Jamaican cases; also through Lt. Com. G. F. Clark, U. S. N., crusts, preserved dry for two weeks, were obtained from a case in Haiti. These were used for the cutaneous inoculation of two *Macacus rhesus*, which showed no reaction other than a serous exudate at the site of inoculation for eight days, when an eruption developed at two of the three sites of inoculation on each monkey. The second of the two Jamaican viruses gave no result on either monkey. The typical lesion consisted of a papule with reddened periphery surrounding a white area with a brownish depressed center. The lesions were discrete, five to eight in number in three of the sites inoculated, and confluent in the fourth. No complete vesiculation appeared, but the itching was evidently severe, since the monkeys abracted the tops of the lesions. These

[1] Aragao, "A proposito do Alastrim," *Brazil medico*, March 15, 1911. Rev. in *Bul'. Inst. Past.*, 1911, ix, 942.

were at their height on the eleventh day, when they showed marked elevation, reddened base, crater formation, and serous exudation. Curettings from one of the monkeys, at this stage, produced no results when inoculated cutaneously on three rabbits, two of which had proved refractory to similar inoculation with the original alastrim material from human cases. The monkeys had no generalized eruption or other symptoms.

Thirteen days after the monkeys were first inoculated with alastrim, one of them was reinoculated with one of the two strains (Jamaican) which had given a successful result, and the other, as well as a control monkey, was vaccinated with an active vaccine virus. The control monkey developed a typical primary vaccinia beginning on the fourth day and reaching its fastigium on the ninth day. The monkeys previously inoculated with alastrim showed nothing beyond a transient reaction of immunity, or of trauma, at the sites of inoculation with vaccine virus and of the second application of alastrim material, respectively.

This immunity to vaccinia is at least as high as that produced by the American strain of smallpox. Three monkeys, some months previous to the above series, were inoculated with vesicle contents from smallpox and developed local lesions similar to those above described. Twenty-four days later they were vaccinated, together with three controls, and showed a definite vaccinal "take," though more rapid and less severe than the previously uninoculated monkeys, *i.e.*, a vaccinoid or accelerated reaction.

126 (1708)

Studies on the action of mercury.

By WILLIAM SALANT and NATHANIEL KLEITMAN.

[*From the Department of Physiology and Pharmacology, University of Georgia, Augusta, Georgia.*]

Observations on the pharmacology of mercury were made, with special reference to its influence on the circulation and respiration. Mercury in a concentration of 1:5000, in the form of the benzoate, succinate and acetate, was injected intravenously into dogs and cats under ether or ether-paraldehyde anesthesia.