

power to fix complement. Inoculations showed that the infective virus had passed through the Berkefeld V candles in large amount, whereas little had come through the Berkefeld W and Seitz filters.

Summary. A complement-fixation reaction is described, with extracts or filtrates of papillomas containing infective Shope virus and antisera effective against the latter. The implications of the work are being studied.

9074 P

Intradermal Venom Reaction. A New Method of Determining Capillary Fragility.

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The intradermal injection of a potent moccasin snake venom in sufficient concentration into animals or human beings is followed by a local ecchymosis. However, dilute solutions, such as 0.1 cc. or 0.2 cc. of 1:3000 will not normally be followed by ecchymosis.¹

The dry scales of moccasin venom are dissolved in physiologic saline with merthiolate added as a preservative. The titration of the venom is carried out by the use of the chicken embryo.² The lowest dilution of venom in 1 cc. amounts that produces hemorrhage of the vascular tree in a four-day-old chicken embryo in a 3-hour period is considered to contain 10 hemorrhagin units. This is usually a 1:3000 solution. Thus 0.1 cc. of standardized venom contains one hemorrhagin unit. Such standardized venom solution will not show deterioration in 4 months at icebox temperature.

The intradermal venom test consists of injecting 0.1 cc.-0.2 cc. (1 or 2 hemorrhagin units) of standardized moccasin venom intradermally and reading the reaction within 30 minutes to one hour, 0.1 cc.-0.2 cc. of physiologic saline injected at the same time serving as a control. A positive test is one in which there is a definite capillary rupture or ecchymosis at the injection site within an hour. The ecchymosis may be one centimeter or more in diameter. A delayed positive reaction is one that shows a diffuse ecchymosis in 12

¹ Peck, Samuel M., *Arch. Derm. and Syph.*, 1933, **27**, 312.

² Witebsky, C., Peck, S. M., and Neter, E., *PROC. SOC. EXP. BIOL. AND MED.*, 1935, **32**, 722.

to 24 hours. A negative test is one that shows no hemorrhage. Confusing reactions such as edema and erythema of various degrees can be differentiated after a little experience.

Because a small area of skin is involved in the venom reaction, it can be repeated at frequent intervals and it can be used to determine local capillary fragility within a very limited area. Furthermore, capillary vulnerability to the hemorrhagins may be measured in areas inaccessible to the tourniquet test, such as the cheek, mucous membranes, gums and center and periphery of skin lesions.

It was shown³ that the most important information thus far obtained by the test was in thrombocytopenic purpura hemorrhagica, in the classification of such cases and in their prognosis. The persistence of a positive reaction to successive tests or a reversal to a negative reaction was of value in determining the trend of the purpuric state. The test could also be used as a guide for venom therapy in the management of cases with chronic thrombocytopenic purpura hemorrhagica, and it is an important indication for splenectomy. After the splenectomy it accurately predicted which of the cases would benefit by the operation.

Since the venom reaction is a test for the purpuric state, it was positive in symptomatic purpura associated with benzol poisoning, aplastic anemia, leukemia, subacute endocarditis, malignancies, nephritis, etc. Although the purpura in those cases was closely related to the platelets, the test did not necessarily serve as an indicator of the platelet count alone.

The intradermal venom test was negative in the affected areas (usually the face) as well as in other parts of the body in a number of cases of chronic discoid lupus erythematoses. In some of the acute forms of this disease the test was negative even when performed in the skin of the cheek showing the lesion. However, a strongly positive test was obtained in 3 cases of lupus erythematoses disseminatus of the acute fatal variety. Such differences in reaction might prove of importance in differentiating the various types of this disease.⁴

The venom test gave varying reactions in different types of purpura not associated with a diminution of the platelets and proved of some use in differential diagnosis. In orthostatic purpura of the legs the venom test was positive only in the affected areas. In toxic purpura where the legs were mainly affected, the test was positive

³ Peck, S. M., Rosenthal, N., and Erf, L., *J. A. M. A.*, 1936, **106**, 1783.

⁴ Baehr, G., Klemperer, F., and Schiffrin, A., *Trans. Assn. Am. Physicians*, 1935, **1**, 139.

not only in that area but on the arms as well. Thus the test differentiated a local from a general predisposing factor as the cause of the purpuric manifestations. Three cases of Schonlein's Henoch purpura gave a negative test. However, a positive reaction was obtained in all regions of the body tested in a patient in whom a similar diagnosis was made. The first 3 cases were probably observed during an inactive stage of the disease. In this way the test serves as an indicator of an active capillary toxic factor.

In 14 cases of coronary sclerosis and in 3 cases of coronary thrombosis a positive test of a peculiar type was observed. Instead of the usual bluish discoloration appearing in one hour, there developed at the injection site a brownish area about one centimeter in diameter. This has not been seen in any other condition.

A negative reaction was obtained in hemophilia.

The character of telangiectatic and vascular lesions could also be studied by means of the test. Vascular lesions of nevoid type such as flat hemangiomas gave a negative test when the injection was made at the margin of the affected area. Obviously we were dealing with normal blood vessels. On the other hand, injections into the skin in the vicinity of a lesion of angioma serpiginosum gave a strongly positive venom test, suggesting the presence of altered capillary structure.

Summary. A new capillary fragility test based on intradermal injections of titrated moccasin snake venom is described. This test was found helpful in the management of thrombocytopenic purpura hemorrhagica. Its applicability as a guide to local, general and toxic capillary changes is discussed.

9075 P

Subneural Gland of Ascidian (*Polycarpa tecta*): an Ovarian Stimulating Action in Immature Mice.

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The subneural gland of the ascidian has long been the subject of controversy in regard to its probable function. On developmental grounds it has been denied admission to phylogenetic series dealing with the pituitary and until quite recently there has been no physiological evidence which might justify including it in such a series on a functional basis.