and a small nodule appeared at the site of the old chancre. Although it was known that the animal still harbored spirochetes,[1] none could be demonstrated by dark-field examination of material from the nodule and it was excised for histological examination. There was a prompt recurrence and with the growth of the second cutaneous lesion, the left inguinal glands became markedly enlarged and indurated. Again no spirochetes could be demonstrated and the lesion with one of the adjacent glands was excised under ether anesthesia. Histological examination of the cutaneous nodules and gland showed a growth which presented more the appearance of a neoplasm than of a syphilitic lesion. It was composed for the most part of atypical epithelioid cells undergoing active proliferation and exhibiting marked invasive tendencies.

Meantime there was a second recurrence and extension of the skin lesion over the mid line at the pubis with enlargement and induration of the right inguinal nodes. A deterioration in the physical condition of the animal was then apparent and progressed very rapidly, culminating in emaciation, weakness, severe anemia, loss of sphincter control with some spasticity of the hind legs and the formation of trophic ulcers about the anus and sheath. On this account, the animal was etherized.

Post-mortem examination revealed a widespread distribution of nodules identical in character with the original lesions. These were most abundant in the liver and bone marrow but were also present in other organs such as the spleen, the lungs and the kidneys.

Transplantation of material from an inguinal node gave a vigorous growth in the original animal and attempts to transfer the growth to other animals have apparently been successful.

102 (1684)

The pharmacology of acetone.

By WILLIAM SALANT and NATHANIEL KLEITMAN.

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

The action of acetone was studied on cats and dogs under light ether anesthesia as well as on the isolated heart of the frog and

[1] See account of rabbit No. 1, *Amer. Jour. Syph.*, 1921, v, 1.

turtle. In the experiments on intact animals acetone injected intravenously produced a fall of blood-pressure amounting in some cases to fifty per cent., especially in dogs when given in a concentration of fifty per cent. in saline solution, and about 2–3 c.c. per kilo. But in a number of experiments smaller quantities of acetone injected in a concentration of 25 per cent. in saline solution produced a similar effect on the circulation. This occurred almost uniformly in cats. Recovery was prompt, as a rule, even when 50 per cent. acetone was given, but occasionally low blood-pressure persisted for 2–3 minutes when larger amounts were injected. The fall of blood-pressure was due to cardiac depression, as was indicated by the fact that there was a corresponding diminution in the volume of the kidney shown by oncometric studies. That acetone in certain concentrations depresses heart action was also observed in our experiments on the isolated heart. Ten per cent. acetone in Ringer solution produced in all our experiments arrest of the heart, and very frequently the same effect was obtained with a five per cent. solution of acetone. Recovery, however, was observed in all experiments, even when the heart was perfused with ten per cent. acetone for several minutes. Not infrequently a stimulating after-effect was observed. That no permanent injury occurred was further shown by the fact that repeated perfusion of the same heart was followed by recovery. With low concentration of acetone no change in the heart action was observed.

Observations were also made on the behavior of the vagus mechanism under the influence of acetone. In dogs, after repeated injections of acetone, stimulation of the peripheral end of the cut vagus with the interrupted current of moderate strength produced prolonged inhibition of the heart. The vagus center seemed likewise to be affected by acetone as it was observed in some experiments that heart action became much slower, especially after large amounts were injected. But when acetone was introduced after previous double vagotomy retardation of heart action was hardly discernible.

The effect of acetone on respiration was much more pronounced than on circulation. In cats prolonged periods of apnea were observed after moderate amounts of acetone were injected intra-

venously. Apnea was usually preceded by decreased frequency and depth of respiration. In dogs the effects were not constant as in several cases moderate amounts of acetone produced stimulation of respiration at first. As larger quantities, however, were introduced the depressing effect became very marked. A frequent phenomenon in our experiments was the occurrence of Cheyne-Stokes respiration after repeated acetone injections. The greater depressing effect on respiration than on circulation was also shown when large amounts of acetone were injected. Blood-pressure remained moderately high for some time after respiration stopped.

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The reaction of taurin with α-naphthylisocyanate.

By CARL L. A. SCHMIDT.

[*From the Department of Biochemistry and Pharmacology of the University of California, Berkeley.*]

Although taurin differs from that particular group of amino acids which constitute the building stones of the proteins in that it contains a sulphonic instead of a carboxyl group, it nevertheless closely resembles the amino acids in its chemical properties. Like the amino acids taurin can be quantitatively estimated when in pure solution either by treating it with HNO_2 and determining the nitrogen set free or by titration with alkali in the presence of formalin. It possesses amphoteric properties[1] and reacts with many of the amino acid reagents. Thus Paal and Zitelmann[2] found that taurin reacts with phenylisocyanate to give α-phenyl-ureidoethylsulphonic acid, Gabriel[3] and his associates prepared

[1] Winkelblech, K., *Z. physik. Chem.*, 1901, xxxvi, 546.

[2] Paal, C., and Zitelmann, G., *Ber. d. d. chem. Gesell.*, 1903, xxxvi, 3337.

[3] Gabriel, S., and Heymann, P., *Ber. d. d. chem. Gesell.*, 1890, xxiii, 157. Gabriel, S., and Colman, J., *Ber. d. d. chem. Gesell*, 1911, xliv, 3628.