years later the present writer sent a detailed description of the markings he had seen and examined to Dr. Ulke, who again asserted his belief that the structures should be referred to ancient algae. He emphasized the following points, which favor algal origin:

(1) Where best developed the markings almost always lie flat with the bedding planes, *i.e.*, they lie parallel with the bedding planes.

(2) The material inside the rods and beads is essentially like the surrounding granular limestone.

(3) Rods and beads alike are separated from the surrounding rock by a tiny groove, suggesting that there was once some sort of "skin" or shell around them.

(4) In some instances the rods bend back at an acute angle.

(5) Some of the rods branch and some possess tiny structures resembling rootlets.

(6) Small lobate markings associated with the "rod-and-bead" structures suggest the fronds of algae.

(7) Rarely the beads decrease in size in one direction, as in a budding algal branch.

(8) Transverse partition walls are indicated in some instances.

The present writer has checked most of the observations just listed and believes that the suggested origin warrants serious consideration. Interpreting these "rod-and-bead" markings as ancient algae would also be in accord with the environmental conditions which are thought to have prevailed during the deposition of the Salem limestone.[4] It has been suggested that this limestone, at least that portion which is a coquina of macerated shell matter, was deposited as a clean calcareous sand in shallow water, having been previous to its deposition a dune or beach sand. In such an environment of deposition algae, such as those which are thought to have formed the "rod-and-bead" structures, may well have found conditions favorable for the extensive growth suggested by the abundance of preserved fossils.

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THE TREATMENT OF "SNIFFLES" IN THE RAT WITH SULFANILAMIDE

"SNIFFLES" or a form of pneumonia in the rat is responsible for a high mortality in all laboratory rat colonies. Recovery is rare, although a rat may linger on for months after the first symptoms appear. In other cases the disease progresses rapidly and causes death within a week. Because no effective treatment is known and because the disease is contagious, it has been a source of considerable loss, particularly in experimental studies in which the rat is tested over a long period of time.

Since sulfanilamide has been successfully used in severe infections in humans and in experimentally induced infections in animals, we decided to test its effectiveness in the treatment of this disease characteristic to the rat.

An experimental and a control group were used, the former being given 50 mg daily (varying slightly with the animal's weight) mixed in the food and the latter given the same care except for the omission of the sulfanilamide. Both groups contained cases in which the disease exhibited varying degrees of severity.

Of the fourteen rats in the experimental group, twelve permanently recovered, whereas two died. All the seven animals in the control group died after varying lengths of time. Prompt treatment with the drug resulted in the more rapid recovery.

No detrimental effects of the drug have appeared despite the fact that some animals received it daily for nearly two months. Detailed case studies will be reported later.

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SPECIAL ARTICLES

EFFECT OF OXYGEN LIGHT AND LACTOFLAVIN ON THE OXIDATION OF VITAMIN C IN MILK

THE oxidation of ascorbic acid and of fat in milk is sensitive to variations in dissolved oxygen as well as to dissolved copper and exposure to light. Lactoflavin is the sole agent in milk responsible for the sensitivity of ascorbic acid to light.

A correlation has been found between the rate of oxidation of ascorbic acid in the dark and the production of a common flavor defect of milk resulting from the oxidation of the fat. The addition of 0.005 to 0.01 per cent. of ascorbic acid delays the development of this oxidized flavor.[1] It is possible that a competition for dissolved oxygen between two distinct processes is involved.[1,2]

Mattick and Kon,[3] Kon and Watson[4] and Kon[5] have found that sunlight, more specifically the short waves of visible light, accelerates the oxidation of re-

E. R. Cumings, Handbook of Indiana Geology, Pt. IV, 1922, p. 504.

[4] E. R. Cumings, *et al.*, 30th Ind. Rept., 1906, p. 1199; J. W. Beede, *et al.*, 39th Ind. Rept., 1915, pp. 204–206;

[1] P. F. Sharp, G. M. Trout and E. S. Guthrie, Tenth Ann. Rpt. N. Y. State Assoc. Dairy and Milk Inspectors, p. 153, 1936.

[2] L. Buruiana, *Biochem. Jour.*, 31: 1452, 1937.

[3] A. T. R. Mattick and S. K. Kon, *Nature*, 132: 446, 1933.

[4] S. K. Kon and M. B. Watson, *Biochem. Jour.*, 30: 2273, 1936.

[5] S. K. Kon, SCIENCE, 85: 119, 1937.