6.0; by halves of six-tentacled *Hydras*, 4.6; by quarters of six-tentacled *Hydras*, 3.8. Of *Hydras* having the same number of tentacles the larger *Hydras*, or parts of them, regenerate more tentacles than the smaller ones or corresponding parts of them. *Hydras* cut longitudinally into pieces of equal volume, but bearing different numbers of tentacles, regenerate as many tentacles as are required to complete a normal number.

In the regeneration of a small fragment of hypostome with tentacles attached, one tentacle became thickened to form the body. Often in the regeneration of whole 'heads' a tentacle whose axis came to lie approximately in the axis of the body apparently became thickened to assist in the downward extension of the body.

In 'heads' severed immediately below the tentacles forms of very abnormal appearance resulted in the process of closing the wound. Abnormalities, consisting in tentacles abnormally placed and in unusual numbers of oral tentacles, persisted for a considerable period. Regulative processes resulted in the degeneration of abnormally placed tentacles and in the establishment of a normal number of oval tentacles. Tentacles but slightly displaced from the circumoval ring were shifted back into it.

The regenerative and regulative processes are directed toward the regaining of a perfectly normal form.

Notes on the Actinians of Bermuda. A. E. VERRILL.

On the Atlantic Palolo Worm. A. G. MAYER.

The Origin of Blood Vessels in the Chick. L. H. SNOWDEN.

The Evolution of the Color Pattern of Columba livia from that Preserved in C. affinis Blyth. C. O. WHITMAN.

BASHFORD DEAN,
Secretary.

STALACTITES OF SAND.

IN Mr. Rose's black-sand gold mine, on the Oregon coast, about fifteen miles south of Coos Bay, are some curious stalactites of sand which deserve attention on account of their exceptional character.

The mine is along an ancient beach about 160 feet above the sea level and nearly two miles distant from the present shore. The black sand in which the gold occurs rests directly upon the upturned and eroded edges of Tertiary shales. It is about 100 feet in width and four feet in thickness, and is overlain by about thirty feet of horizontal Pleistocene sand beds with some gravel. These have to be removed before the black sand can be reached. The black sand at this point is composed chiefly of garnet, with a number of other heavy ferromagnesian minerals. It is partially cemented by oxide of iron, but may be readily crumbled in the hand.

The gray sand by which the black sand is immediately overlain is composed chiefly of quartz, but contains also many grains of feldspar besides those of other minerals and rocks. In some places this gray sand is cemented so firmly as to form a friable sandstone, and when the black sand is removed from beneath the exposed under surface of the sandstones is found to be covered with stalactites of sand. The cross bedding in the sand dips gently to the west. The stalactites incline westward at the same angle, forming only a small angle with the surface to which they are attached. The forms of the stalactites are well developed; some are small, others nearly a foot in length. Most of them are single, but a few are double, as if two were united in their development. There is no sign of a tube down in the center, as in the case of many stalactites of carbonate of lime.

The cementing material by means of which the sand is held together, making these curious forms, is not soluble in acid.

In a thin section under the microscope it is seen that each grain of the sand is surrounded by a thin coating of crystalline quartz which fills the small interstices and binds the whole together.

It seems altogether probable that the solutions bearing silica followed the porous layers of sand in the cross bedding, but what determined its deposition through the sand in the shape of an icicle is not so easily understood. It is not impossible, although quite improbable, that wind erosion had anything to do in developing these forms. The stalactites exposed in the mine were not so situated as to be attacked by drifting sand. Their local character is scarcely less difficult to explain satisfactorily than the peculiar forms themselves.

J. S. Diller.

U. S. Geological Survey,
Washington, D. C., February 18th.

SCIENTIFIC BOOKS.

Degeneracy: Its Causes, Signs and Results. By Eugene S. Talbot, M.D., D.D.S. The Contemporary Science Series. London, Walter Scott, Limited; New York, Charles Scribner's Sons. 1898. Illustrated.

The busy reader who has dipped into the works of Morel, Lombroso, Nordau and other writers upon degeneracy, and who has become, perhaps, somewhat confused by conflicting opinions and sweeping applications of this interesting biological doctrine, will receive with delight this calm and dispassionate as well as condensed 'conclusion of the whole matter' (up to date). The plan of the book is good, giving as it does a brief survey of the whole subject from its historical, biological, psychological and pedagogical points of view. The author, too, is well prepared for his task, having a wide dental and medical experience, and, particularly, a most extensive acquaintance with the literature of the subject, especially of that literature which is most valuable here, viz., that of the medical and biological journals. This gives the book a healthy inductive tone. The author spends no time in the discussion of theories of his own or of others. He gives us rather a summary of facts relating to the antecedents and the symptoms of degeneracy in all its forms. Of the eighteen chapters some of the most interesting are the ones on heredity and atavism, consanguineous and neurotic intermarriages, toxic agents, school strain, degeneracy of the brain and degeneracy of mentality and morality. In the chapter on heredity and atavism the summary of the accumulated evidence against Weismannism is rather striking.

In a series of chapters the author discusses the causes of degeneracy. Among these, contagious and infectious diseases, led by tuberculosis, syphilis, typhoid fever, scarlatina, small pox, measles and diphtheria, are the most prolific. Other leading causes are toxic agents, such as tobacco, alcohol, opium, tea and coffee, insufficient or impure food and unfavorable climate, and, finally, school strain among children. The immediate consequence of these agents is nervous exhaustion in the first generation. The offspring of these neurasthenics do not possess the necessary vitality to carry them through the normal process of development. The result in the second generation is arrested development of the nervous centers and degeneracy of bodily structure, exhibited in the form of reversions to primitive types. Very full descriptions of the various stigmata of degeneracy follow. Among them are local reversionary tendencies, such as anomalies of skull, jaws, teeth, ears, etc.; nutritive degeneracy, shown in cancer, gout, goitre, adenoids, plural births and excessive fecundity; sensory degeneracy, such as deaf-mutism and congenital color-blindness; intellectual degeneracy, such as paranoia, hysteria, epilepsy, idiocy and one-sided genius; and ethical degeneracy, such as crime, prostitution, pauperism and inebriety. Degeneracy caused by alcohol is less dangerous to the community than that caused by opium and by various contagions and infections, since, owing to its deteriorating effects upon the reproductive organs, it tends to exterminate itself. This non-survival of the unfit is by no means true of all forms of degeneracy. Healthy atavism, however, is always at work and tends to counteract the immediate results of heredity.