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CANADIAN DRUGGIST,
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SPECIAL REMINDERS.

We issue on the 15th of each month, therefore,

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SPONGES.

ALTHOUGH sponges have been in use for so many years, until recently there has been much difference of opinion as to whether they were animal or vegetable in their nature, but, by careful study of fossil organism, great advance has been made in our knowledge of their origin and phenomena, and zoologists now classify them with the former, although they have little to characterize them as such. Until about 1876 one of the chief obstacles to the interpretation of fossil sponges arose from a singular mineral replacement which most of them have undergone, leading to the substitute of calcite for the silica of which their skeletons were originally composed. This change was demonstrated by Zittel, which was at first pronounced impossible, but since then several palaeontologists have worked at the subject and a catalogue of the sponges preserved in the British Museum has been published.

NATURE AND CHARACTERISTICS.

Sponges are divided into a vast number of specific forms, some being globular; some cylindrical, conical, cup-shaped, thread-like, &c., but all are attached, like plants or zoophytes, to rocks, stones or other substances in water. Their activity is most obviously manifested by a rapid overflow of water from the oscule, and a gentle instreaming through the minute

pores, carrying with it both the air and the organic particles necessary for the support of life. They consist of a gelatinous substance (*Sarcodé*) which, if portions are examined under the microscope, variable processes will be seen in motion, and all, except three or four genera, possess some kind of skeletal structure, which is often formed of a horny, elastic substance, in fibres, which grow from a broad base, and which, sometimes, enclose spicules or foreign bodies which also contribute to the formation of the skeleton of some silicious sponges, occasionally forming the entire skeleton; others consist of calcareous spicules imbedded in the gelatinous mass and exhibiting great variety of form and arrangement. The spicules of these sponges consist of carbonate of lime having the crystalline structure and other properties of calcite. They are most beautiful microscopic objects, each spicule, as far as its mineral component is concerned, is a single crystal, all the molecules of calcite of which it is built up, being similarly oriented, and its surface usually has the form of a cone or combination of cones and is always curved.

In a living state many sponges exhibit lively colors, usually from the presence of cells containing granules of pigment, which in some undergo a remarkable change of color when exposed to the air and finally fade away. In many cases they borrow their color from parasitic algae with which they are infested. Sufficient is known to enable us to make up two chief types of development although the details in this subject are very obscure. One, common amongst the calcareous sponges, is characterized by what is known as the "amphiblastula" stage, the other by the "planula" stage. The independent development of similar types of canal system in different groups, sometimes within the limits of a single family, is a remarkable fact, and tellingly illustrates the doctrine of homoplasy, enunciated by Lan Kester.

SPONGE FISHERIES.

Different methods are employed to get sponges from the bottom of the sea, according to the depth from which they are to be brought. In comparatively shallow water they may be loosened and hooked up by a harpoon, a five-pronged fork, with long wooden handle; at greater depths, down to 30 or 40 fathoms, they are dived for; and at depths of from 50 to 100 fathoms they are dredged with a net. Over 6000 men and boys are em-

ployed in the Bahamas, where harpooning is carried on, after the system of the Greeks, who use a zinc plate cylinder, closed at the lower end by a plate of glass, through which, when immersed, the bottom of the sea may be clearly seen, even in 35 fathoms.

The work of diving, which is usually carried on in the summer months, is very severe on the diver, who reaches the surface in a swooning state, if he has been working at depths of 30 or 40 fathoms or more. The primitive method of diving with a slab of stone, to serve as a sinker, and a cord to communicate with the surface, is still practised in the Mediterranean.

Dredging is chiefly carried on along the western coast of Asia Minor. The mouth of the dredge is 6 yards wide and 1 yard high; the net which is made of camel-hair cords, with meshes 4 inches square, is drawn along the bottom by a tow line, attached to the bowsprit of a sailing vessel or hauled from the shore.

CULTIVATION.

Sponges may be artificially propagated from cuttings, and if in a favorable situation, in a sheltered bay, with a rocky bottom, overgrown by sea-weed and freshened by a gentle current, the cuttings will grow to a sponge two or three times their size in one year. The chief drawback to successful sponge farming, which was carried on by the Italian Government in 1872, and more recently in Florida, seems to be the long interval, which the cultivator has to wait for his first crop, as they are not ready for the market for from five to seven years.

COMMERCE.

The net work of elastic horny fibres, which remains behind, after the living matter has been removed, is the skeleton of the animal, which is the sponge of commerce. One would not recognize in the dark - almost black substance, so full of mud, sand and shells, the light yellow soft affairs in our shops. A visit to one of these sponge warehouses in London or New York would give us an insight as to the way this change is brought about, where the manipulator, frequently a native Turk, is engaged in effecting this interesting metamorphosis. Surrounded by a number of tubs, each containing a dark and foul smelling liquid, he starts to work, and by maceration and washing the gelatinous substance is disposed of. First the sponges are separated, the "grass," which is a poor quality, is broken in small