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About 'Sea Eggs.'

(By the Rev. W. Williams, F.L.S., in 'The Spectator,' Australia.)

In the houses of people who are fond of seashells, seaweed, and such things, you will often see some objects of a dark bluish-grey color, shaped something like globes with flattened poles, covered all over with dots and rounded lumps, and perfectly hollow. If you ask what they are you will probably be told that they are 'sea-eggs.' Our 'chat' to-day shall be about these.

have never seen one there. The living echinus is covered all over with spines, or prickles, and it is not till these are taken off that you get any idea that it is what people call a 'sea-egg.' Then the shell during life is covered with a layer of flesh, which further disguises it. But when they die this flesh decays, and the spines get rubbed off; the contents of the shell also decay, and then the shell only is left, and it is these dead, empty shells that are picked up as 'eggs,' and preserved as curiosities from the seashore.

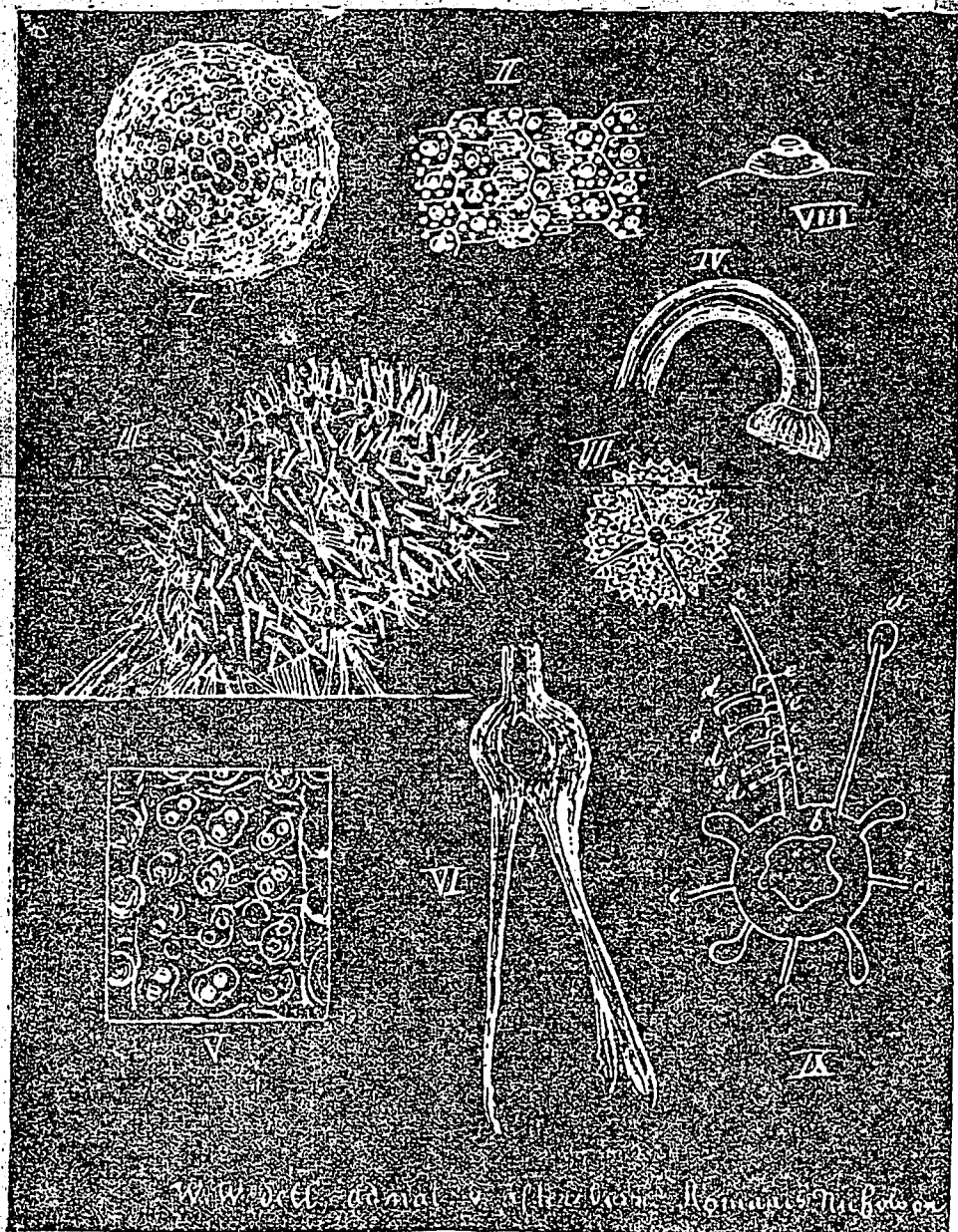
The shell itself, like most other shells

Though the shells usually seen are of a dark grey or slate-like color, yet all are not. I have before me as I write two specimens (the larger of which covers a space of seventeen square inches), which are pure white, looking like carved ivory, and the 'nipples,' or 'buttons,' of which we shall presently hear, are most beautifully smooth and highly polished. But whatever the size or color of the shell, the animals are formed on the same plan, and a description of one will serve for the whole.

The formation of the shell is best seen in young specimens, because in full age the mixed animal and mineral matter becomes so thick that the formation cannot be easily made out. Fig. 1 in the block, is a sketch of a young shell on the under side. You may see there that the shell is composed of a number of plates, the edges of which form a waved line of 'vandyke,' or triangular pattern. Fig. 2, shows a part more highly magnified. Notice first the general arrangement of the plates; how the point of one fits into the valley between the points of those in the next row. Notice, too, the double circles, one inside the other, on the plates, standing in even rows. Then see how in the middle of the figure the plates have one end cut into fingers, and that these are covered with dots. All these markings have value to the animal which lives in the shell. In some kinds of echini (plural of echinus) the plates are not fastened together solidly where they overlap, but give a little at each joint, so that the shell can be bent, though it never bends much. Sometimes where the plates overlap one has a little rounded button upon it, and the other a little hollow into which the button fits, and these are called 'dovetailed' shells.

Now, to explain the double circles. If you look at Fig. 3, you will see an echinus as it appears when alive and at work, only that there are a great many more objects on the shell than I have drawn, for I want to make these things as clear as I can, and too many lines would confuse you. There you will see a number of sharp prickly points shown, all over the surface of the shell. These are called 'spines,' and they are formed in a curious way. Do you know what the shape of a cone is? Take a newspaper, and cut a large triangle out of it, then bend this round until two edges meet, and that will be a cone. It is shaped much like the 'screw' of paper which the grocer twists up to hold lollies when you buy them. Fancy several of these cones or screws of paper, put one over the other, so that they fit, with the small end of one on the large end of the other, and you will see how the spine of an echinus is built up. I have just been looking at one through a microscope, and find that it is made of five such cones. They are not solid, but very spongy and light.

The bottom of the spine is hollowed into a cup, smooth and polished. Why is this? Fig. 8, is a sketch of one of those double circles, looked at sideways. You see it is a little hill, with rounded sides, carrying a 'nipple,' or 'button.' I think we will call it a button. The little hill carrying the button is called the 'boss,' and is not particularly smooth in the specimen before me



The name is about as wrong as it could be; they are not eggs at all. I suppose people called them so because of their shape, and the thinness of the shell, just as a seashell of a particular kind is known to some folks as 'poached egg,' because it is pure white and egg-shaped. These 'sea-eggs' are simply the box or shell in which lives a curious animal, called by scientific men 'echinus' (pronounced e-ki-nus), of which the common English name is 'sea-urchin.' You may often pick it up on the seashore, but unless you know something about it you will probably say that you

of sea animals, is made of carbonate of lime. It is the same material as that used by ordinary shell-fish, in forming their shells, and sea-water contains a great quantity of it. The shell is not pure carbonate of lime, but contains both animal matter and the carbonate, though the material of the shell is mostly lime. When the animal matter is removed we find that the lime is deposited in a very curious manner, so that an expert observer can tell from a small fragment of the lime skeleton whether or not it was once part of an animal similar to the echinus.

Lille Puzos 883-48