SPONGES, TORN TO BITS, REASSEMBLE THEMSELVES

A sort of scientific Humpty-Dumpty, able to reassemble itself after being shattered to bits, and needing neither the King's horses nor the King's men to help in the process, was described by Paul S. Galtsoff, naturalist on the U. S. Bureau of Fisheries steamer, "Albatross", before the American Society of Zoologists.

Mr. Galtsoff squeezed small living sponges through fine gauze filters, thus breaking their jelly-like flesh down to the separate cells of which it is composed. Falling into a dish of water, the cells began to creep along the bottom. Where they came into contact with other cells they coalesced with them forming little clumps.

At first these little clumps were simply haphazard assemblages of all the different kinds of cells that go to make up a sponge, but as time went ona sorting process took place, and skeleton cells, flesh cells, and each of the other types slowly migrated into its appropriate place, untill at the end of about two weeks each little clump had become a small, perfectly organized, independent sponge animal.

The experimenter stated that for a successful development at least two though and cells are necessary; groups composed of a smaller number of cells fall to develop and finally die. Apparently the cells know their kindred. If cells of two different species of sponges are mixed together they move independently, and each kind coalesces only with other cells of its own species.

USE IRON TO ENSNARE AIR NITROGEN

Difficulties in the path of those who would capture the nitrogen gas of the atmosphere, famous for its aversion for other chemicals, were brought to the attention of the American Chemical Society by Dr. J. A. Almquist. of the Fixed Nitrogen Laboratory. Among the most promishing of the methods so far introduced for accomplishing this result, which would cheapen fertilizer, is the making of synthetic ammonia. This pungent gas, formed by the union of three atoms of hydrogen with one of nitrogen, would then serve as the starting point for the manufacture of other nitrogen-containing substances.

Nitrogen and hydrogen can be caused to unite by the agency of catalysts, which are substances capable of producing reactions between chemicals unwilling to unite, although the catalysts themselves do not actually form a part of the new substance. This is the method to which Dr. Almquist has devoted his attention.

"We have made an extensive investigation of catalysts for this reaction," he said. 20bservations with materials of the iron type have shed light on the nature of the processinvolved." Just why the presence of one substance will set off a reaction between others when none of it is used up in the operation, is a point which still puzzleschemists, and one which is the subject of much investigation.

Dr. Almquist and his associates have found, in the case of the iron catalys in ammonia synthesis, that the pressure under which the nitrogen and hydrogen gases are kept influences the efficiency of the catalyst; they find that the absorption of the product, ammonia, slows up the operation. It was previously thought that the