

Article XVI.—OBSERVATIONS ON A REMARKABLE
SPECIMEN OF HALYSITES AND DESCRIPTION
OF A NEW SPECIES OF THE GENUS.

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PLATES XLI AND XLII.

During the year 1879 the Museum authorities purchased a small collection of fossils (mostly western) from Mr. H. T. Woodman. Among them were several specimens of *Halysites*, one of which is the subject of the following observations.

It is remarkable in the first place for its size, being one of the largest known. It also presents on its upper side the original surface of the coral in about the condition it had while living in the Silurian seas. The surface presents seven botryoidal or convex bosses, characteristic of growing corals living at the present time, such as *Orbicella* and similar forms. In the variety of *Halysites* represented by the specimen the spaces between the lines of cells, or intermural spaces, are below the medium size, but not small enough to be classed under the variety known as *H. micropora*.

It is a noticeable feature that in the depressions between the several bosses forming the mass, the cell spaces differ remarkably in their form from those on the sides and on the surface of the elevations, where their form is that of the normal *Halysites catenulatus*. But in the places referred to, they are extremely elongated and compressed laterally, so that some of them are considerably over an inch long, while the two lines of polyp cells are almost in contact with each other. This feature obtains more or less generally low down on the sides of the bosses or in the channels between them, and only very sparingly further up on the sides or on the elevated portion of the boss.

Another noticeable feature of the cell walls is that the solid portion between the different cells is extended upward in a toothlike extension, producing along the crest of the ridge a sawlike or comblike character seldom seen on the ordinary specimens of the species; at least it is not seen on

any of the many specimens in the Museum's collection. There is often on silicified specimens a rounded knob-like feature produced by over-silicification, but it is entirely different from the feature mentioned above, and in examples from near Louisville, Ky., is seen as often on the lower as on the upper side of fragments.

The specimen in question was found in Jackson County, Iowa, together with many other fossils of the Niagara Group. Among them are two individual groups of a form which has for years been placed among specimens and labeled *Halysites agglomeratus* Hall, which are peculiar and remarkable as showing distinct radii in the polyp cells, a feature seldom or never seen in the typical form of the genus and one quite generally thought not to exist in the genus. These specimens, when closely compared with the typical series of *H. agglomeratus*, are found to differ in other important particulars as well as in the existence of cell rays. The cells are larger, the walls less thickened, the tabulæ thinner, flattened, instead of being strongly convex upward as in the types, and much more numerous. I therefore propose to separate it as a different species under the name *Halysites radiatus* with the following diagnosis.

***Halysites radiatus*, n. sp.**

PLATE XLII, FIGS. 1 AND 2.

Colony large (?), probably convex, at least showing distinctly diverging tubes as if rising from an initial center below. Polyp cells united laterally, forming on the surface lines or chains as in other species of the genus. Intermural spaces very irregular, owing to the tortuous windings of the lines of polyp cells. Polyp cells elliptical, about 1.5 mm. wide in the direction of the line of cells, and a little over 1 mm. in transverse diameter. Rays quite generally twelve in number, seldom extending quite to the center, but usually fully two-thirds of the distance. Tabulæ entire, flat, or nearly so, six or more in the space of 1 mm., but occasionally nearly twice as distant. External walls of the tubes transversely corrugated.

In only a single instance, on the specimens studied, a cell shows only eleven rays, but it occurs in a cell where the walls of surrounding cells have crowded this one out of shape. The rays are often recumbent on the surface of the tabulæ.

Geological position. Niagara Group. Jackson County, Iowa. Loose.

EXPLANATION OF PLATE XLI.

Halysites catenulatus Linn., page 489.

A photograph of specimen, $\frac{1}{4}$ nat. size.



HALYSITES.

EXPLANATION OF PLATE XLII.

Halysites radiatus Whitf., page 490.

FIG. 1.—Side view, nat. size, of the type specimen, showing the large size of the tubes.

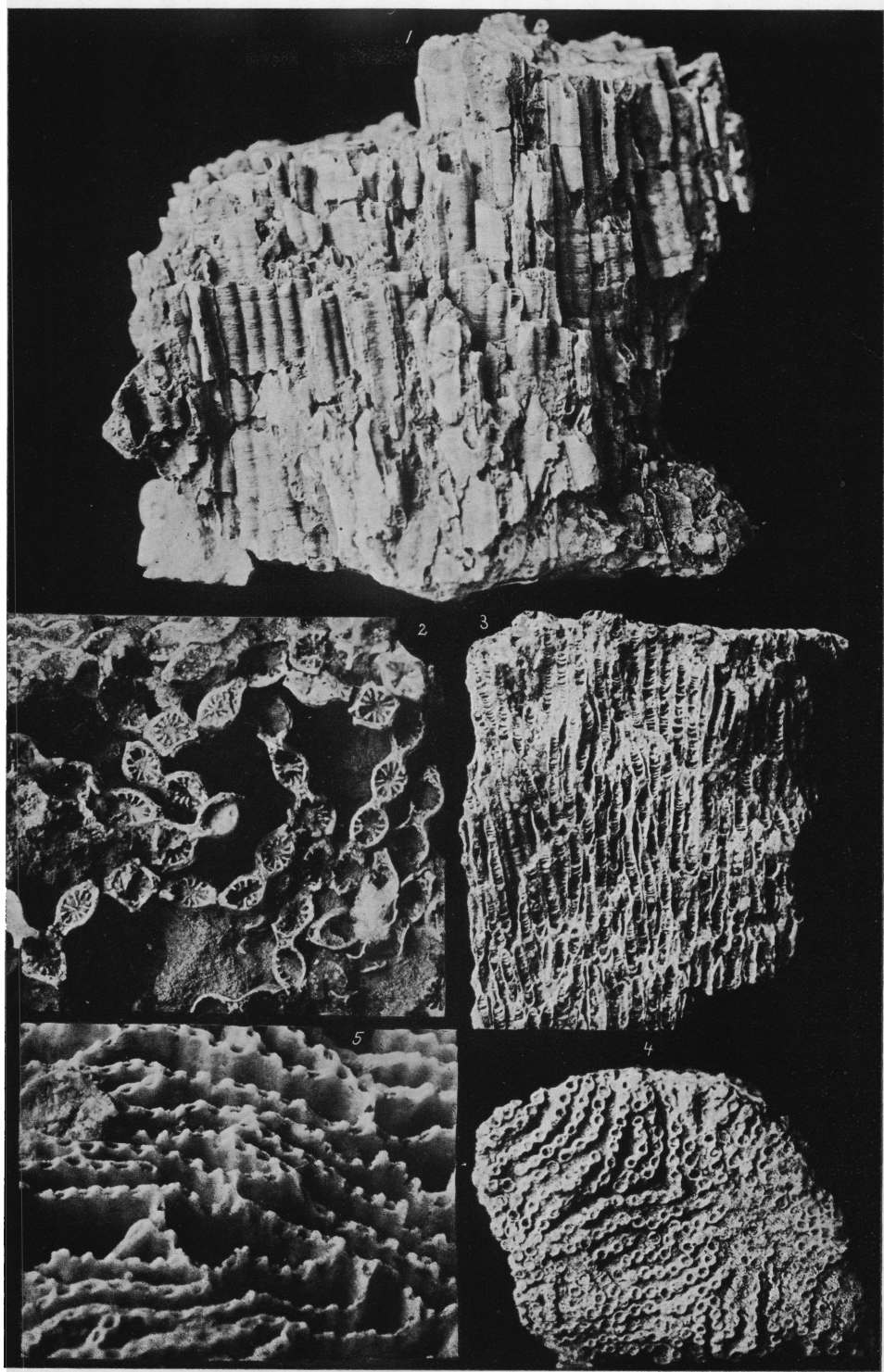
FIG. 2.—View of the cells showing rays. Enlarged to two diameters.

Halysites agglomeratus Hall.

FIGS. 3 and 4.—Side and top views of one of the types, nat. size.

Halysites catenulatus Linn.

FIG. 5.—Enlarged photographic view of a small spot of the specimen shown on Plate XLI, to show the projecting points between the cells. This feature exists over much of the surface where not abraded.



HALYSTES.

