

which may be seen descending into it to various depths. The surface layer of the bottom of the cup, extends the whole width, bending downwards a little near the margin, as in *Zaphrentis*, and uniting with the inner wall of the cup all around. It thus seems to represent one of the tabulæ of a *Zaphrentis*. The following are the principal variations observed in this part of the fossil.

1. Specimens with a perfectly smooth space in the bottom of the cup; no columella.
2. A smooth space with a small conical tubercle near the centre.
3. Smooth with a small ridge, two lines in length and half a line in height and width.
4. Smooth with a compressed columella 3 lines in length, 2 lines in height, most elevated next to the fossette, gradually declining in height towards the opposite side.
5. Smooth spaces very small, columella, a low elongated ridge, with a few tubercles on its crest.
6. Columella well developed, but with tubercles on it and around it.
7. Septa reaching the columella and more or less corrugated and either with or without a columella.

In all cases where the columella is elongated, its length extends in a direction from the fossette to the opposite side. In those which have the septa extending to the centre the columella is often represented by a low rounded elevation.

It is difficult, perhaps impossible, to decide whether or not this group of forms, is specifically distinct from *H. excellens*. The greatest difference is seen in the surface characters. In *H. excellens* the folds of growth are in general numerous and angular, although some are rounded. In *H. prolifica* they are in general few and nearly always rounded. In *H. excellens* I have only been able to make out the septal striæ distinctly in one specimen. At 1 inch from the base there are 5 and at  $2\frac{1}{2}$  inches 4 in the width of 3 lines. In *H. prolifica* there are 8 to 10 at 1 inch, and 6 to 8 at  $2\frac{1}{2}$  inches.

To this may be added that *H. excellens* is extremely rare, while *H. prolifica* is very abundant.

*H. prolifica* is abundant in the Corniferous. I have seen only one specimen from the Hamilton group.