

not known in New York, besides two at Mackenzie River. But in Nevada, 10 per cent occur in both the Lower and Upper 500 feet of the limestone; and 11 per cent of the Lower Devonian are known only in the Middle or Upper of New York. Many species, therefore, were in existence over the central and west-central portion of the continent before they reached, by migration, the shallower waters of New York and Pennsylvania on the eastern border of the Continental Interior. The species include about 25 of Corals, numerous Brachiopods, Lamellibranchs and Gastropods, very few Cephalopods, Trilobites and Crustaceans, and no Eurypterids or Fishes.

Characteristic Species.

PLANTS.—On *Nematophyton* and other Devonian plants see Dawson's *G. Hist. Plants*, 1888; *Trans. Roy. Soc. Can.*, 1889; also on other Devonian (Erian) Flora, the Report in the *Geol. Survey of Canada*, 1871; also earlier, *Q. J. Geol. Soc.*, vols. xv. xviii., xix., xxvii. Dawson also reports a species of *Leptophlæum* from the Lower Gaspé beds or Upper Helderberg. *Drepanophycus* of Göppert (1852), described as a seaweed, has been shown to be the same as *Psilophyton*. The supposed fruit of *Chara* is still of doubtful nature. See Knowlton, *Am. Jour. Sc.*, xxxvii., 1889.

ANIMALS. 1. **Spongiozoans.**—Species of *Astræospongia*, and *Hindia*; *Ischadites bursiformis* H., Schoharie grit; *Stromatopora ponderosa* Nich., Ohio; *Syringostroma densum* and *S. columnare* Nich., Ohio.

2. **Actinozoans.**—Fig. 858, *Zaphrentis gigantea* Raf., and 859, *Zaph. Rafinesquii* E. & H., from the Falls of the Ohio, *Z. Edwardsi* Nich., Ohio, *Z. prolifica* B., Ohio; another Coral, of the genus *Chonophyllum* (*C. magnificum* B.), has a diameter at top of 6 or 7 inches; it is from Walpole, Canada West. Fig. 860, *Phillipsastrea Verneuili* E. & H., *P. gigas* Owen, Iowa, Ohio; *Cystiphyllum Americanum* E. & H., *Heliophyllum Halli*, E. & H.; Fig. 861, *Cyathophyllum rugosum* H., fragment from a large mass, Falls of the Ohio; Fig. 862, *Favosites Goldfussi* D'Orb., Falls of the Ohio, a fragment; *F. turbinatus* B., Canada, Ohio; Fig. 863, *Syringopora Maclurii* B., Canada, Ohio; Fig. 864, *Romingeria cornuta* B., from Canada.

3. **Hydrozoans.**—Of the genus *Dictyonema*.

4. **Echinoderms.**—Species of *Dolatocrinus*, *Megistocrinus*. Of Blastoids (Pentremites), Fig. 865, *Nucleocrinus Verneuili* L. & C.

5. **Molluscoids.**—(a) *Bryozoans* are represented by many species of *Fenestella* and other genera.

(b) *Brachiopods.*—Figs. 866, 867, *Spirifer acuminatus*, Con., N.Y., Ohio, Ind.; Fig. 868, *Spirifer gregarius* Clapp, N.Y., Ind., Ky., Falls of the Ohio; *Leptaena rhomboidalis*, Wilckens, Canada. Also, *Pentamerella arata* Con., N.Y. and the West, *Atrypa reticularis* Linn., *A. impressa* H., *A. aspera* H. var. *occidentalis*, *Amphigenia elongata* Van., *Chonetes hemisphericus* H., *C. lineatus* Van., *Productella navicella* H. *Meristella nasuta* Con., N.Y. and the West.

6. **Mollusks.** (a) *Lamellibranchs.*—Fig. 871, *Paracyclas proavia* Goldf. (*elliptica* H.), N.Y., Ohio, Ind. Fig. 872, *Conocardium cuneus* Con., Ohio, Ind.; *Solenomya vetusta* Meek, the first known species of the genus, Ohio.

(b) *Pteropods.*—*Tentaculites scalariformis* H., N.Y., Ohio, Ind., *Hyolithes ligea* H.; *Conularia elegantula* Meek.

(c) *Gastropods and Cephalopods.*—Fig. 873, *Platyceras dumosum* Con., from New York and Columbus, Ohio. A dozen species of *Platyceras* have been described, and 5 or 6 or more of each *Platystoma*, *Euomphalus*, *Loxonema*, *Pleurotomaria*, *Murchisonia*,