

*cephalus*, at least in adult individuals, is the comparatively undivided character of the caudal shield. In the Whitby schists, however, trilobites occur, over seven or eight inches in length (if not longer,) with the caudal extremity not only distinctly trilobed, but also marked with numerous and distinct pleuræ extending almost to the edge of the striated limb; whilst at the same time, they agree in all other respects with *A. platycephalus*. In the union of the facial suture above the glabella, for example, the two are alike; and in the peculiar character of the body-segments and pleuræ, not the slightest difference is perceptible. As no figure of this trilobite is given in Hall's Palæontology, and as the form appears to differ from the figured European species, we propose to confer upon it provisionally the name of *Asaphus Canadensis*. If it be really new, it may be placed as the type of a particular subdivision of the Asaphide, in accordance with the following scheme:—

*Asaphide with facial sutures united:*

§1. *Pygidium, undivided*:—Type, *A. platycephalus*.

§2. *Pygidium with grooved axis*:—Type, *A. expansus*.

§3. *Pygidium with grooved axis and pleuræ*:—Type, *A. Canadensis*. A drawing of this latter species will be given in the second part of our Paper on the Trilobites.

#### MINERALOGICAL NOTICES.

*Dufrenoyite*:—Ch. Heusser has communicated to Poggendorff's *Annalen* (1856, No. 1.) some additional information on the crystallization of Dufrenoyite [ $2(\text{PbS}) + \text{As}_2\text{S}_3$ ] from the dolomite of the Binnenthal. He confirms the Monometric character of the mineral; but, in addition to the forms hitherto discovered, viz:—the rhombic dodecahedron, and the leucitoid 2-2, he announces the cube, the octahedron, a second leucitoid 6-6, and a trisoctahedron 3. Hardness, 4.5

*Binnite*:—Heusser has also subjected to a detailed examination, the steel-grey metallic sulphide which often accompanies the Dufrenoyite at the above locality. This mineral has been known in Switzerland for some time under the name of Binnite. It occurs in very small and longitudinally striated prisms of extreme brittleness. Streak, dark-red, much darker than that of Dufrenoyite; specific gravity (according to an earlier determination of Von Waltershausen on specimens taken by him for Dufrenoyite) = 4.477. These latter specimens, according to Uhrlaub, contained sulphur, arsenic and copper, with a mere trace of lead. The system of crystallization of Heusser's specimens, was apparently Trimetric, but the prism-angle could not be obtained, owing to the striæ on the faces. The measured angles, those of a series of domes, but whether macrodomes or brachydomes not determinable, did not accord with the measurements obtained by Von Waltershausen. An examination of further specimens is consequently desirable.

*Hyalophane*:—The dolomite of this same locality furnished to Von Waltershausen another mineral, which he described as new, under the name of Hyalophane. It was thought to contain:  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{CaO}$ ,  $\text{MgO}$ ,  $\text{NaO}$ ,  $\text{BaO}$ ,  $\text{SO}_3$ , and  $\text{H}_2\text{O}$ . Heusser has shewn, however, that it is simply an adularia variety of Orthoclase, containing accidental particles of Iron pyrites, and interpenetrated by Dolomite and Heavy Spar. Seven distinct crystals carefully freed from these impurities, and tested respectively by the blowpipe, did not yield the slightest trace of sulphur.

*Rhodonite*:—Crystals of the Silicate of Manganese, or Rhodonite, are, it is well-known, of rare occurrence. From those hitherto met with, and from the cleavage planes of massive specimens, the crystallization of the mineral has been long considered identical with that of Augite or Pyroxene: a supposition apparently con-