Genus. ASAPHUS (in a wider sense than *Brong.*)

Gen. Char.—Head and tail nearly equal; *eyes* with a firmly fixed, thick cornea, with a smooth external surface; *facial suture* cutting the *posterior* margin of the cephalic shield within the lateral angles; *thorax* with eight to ten segments, having large facets and distinct, wide, nearly straight pleural grooves, not reaching the margin; *glabella* indistinctly defined in front; *pygidium* with the segments usually indistinctly marked, the axis generally distinct and annulated, when traceable, always elongate conic (of the ordinary type).

Contains among others the following subgenera, 1st, *Asaphus* (not British, taking the *A. cornigerus* as the type); 2nd, *Isotelus.*

Subgenus. ISOTELUS (*Dekay*).

Gen. Char.—Large, elliptical; *buckler* semielliptical, with the angles rounded, or produced backwards into spines; *glabella* indistinctly defined; *eye-lines* meeting at an acute angle at the front margin, thence diverging backwards, slightly approximating again about the middle of their length, where the "hiant" *eyes* are situated, and again diverging to cut the posterior margin near the angles; *thorax* of eight segments, axis as wide or wider than the lateral lobe, the ends of the pleuræ rounded, with a strongly marked triangular facet and pleural groove; *pygidium* resembling the buckler in size and shape, trilobed, and generally with a broad smooth margin; axis and lateral lobes with fine segmental furrows, or smooth.

There seem to be two types, 1st, the ISOTELUS (*gigas*, &c.), having the angles at the head rounded, and no distinct segmental divisions of the pygidium; 2nd, (*Asaphus tyrannus*, &c.) having the lateral cephalic angles produced into spines, and both the axis and lateral lobes of the pygidium distinctly defined and divided into simple segments. After a careful review of all the species I do not, however, feel competent to separate them; if it should be found convenient to distinguish them as subgenera, the name *Isotelus* should be retained for the former, and the latter might be called *Basilicus*, as suggested by Mr Salter, in the 2nd Decade of the Geol. Survey. *Basilicus* differs from *Ogygia*, which it closely resembles in shape, in the facets of the pleuræ, as well as the simple (not duplex) furrows of the pygidium; the glabella is more prominent than in *Isotelus* proper.

ISOTELUS AFFINIS (*M*^c*Coy*). Pl. 1. F. fig. 3.

Syn. and Ref.—*Isot. gigas, I. planus* and *I. Powisii* of Portk. Geol. Rep. (not of the writers he refers to) Pl. 6. f. 1. and t. 7. f. 2 and 3.

Sp. Ch.—Axis of the body only slightly exceeding the pleuræ in width; *pleuræ* gently arched downwards at a very obtuse angle; from about half way between the axis and the extremity, a large pleural furrow reaches from the axis to about one-third of the truncated extremity of each; *pygidium* flattened, semielliptical, or slightly trigonal, from the straightness of the sides; *axis* narrow, sharply defined, gently convex, reaching as far as the concave space round the margin.

In general proportion this resembles the *Isotelus gigas* (Dekay), from all the varieties of which it is distinguished when specimens of the same size are compared, by the much greater flatness or depression of all its parts, the long, narrow, sharply defined axal lobe of the pygidium, and the much greater length of the pleural groove of the pleuræ (nearly double that of the *I. gigas*), and distance of knee from the axis, as well as their slight degree of deflection (being bent at nearly right angles at one-third from the axis in *I. gigas*). The pygidium differs from that of the *I. Powisii* (Murch. Sp.) by the absence of all segmental furrows on the lateral lobes, except the first, and by the more pointed outline and narrow margin.

Position and Locality.—Not uncommon in a schist over the iron-works at Tremadoc, Merionethshire; very similar in appearance to that at Pomeroy, county Tyrone, which afforded the species to Col. Portlock.

Explanation of Figures.—Pl. 1. F. fig. 3. Pygidium and thorax natural size, from the fine slates over the iron-works of Tremadoc.

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