

2. On Some New Crustacea from the Cementstone Group of the Calciferous Sandstone Series of Eskdale and Liddesdale.  
By B. N. Peach, F.G.S., of the Geological Survey of Scotland. Communicated by Professor Geikie.

(*Abstract.*)

The species enumerated in this paper belong to the two orders Phillopoda and Decapoda.

Of the Phyllopods, the author describes two species of *Ceratiocaris* (Salter), which differ from their Upper Silurian allies in the enormously-developed abdomen and in the small size of the carapace, also in the comparative insignificance of the side spines of the tail compared with the telson. As far as the author is aware, these are the first obtained from the Calciferous Sandstone series, although carapaces of *Ceratiocaris* have been got from the Mountain Limestone of England. (*C. Scorpoides*, 1½ to 2 inches long; *C. elongatus*, 5 to 8 inches long.)

Of the Decapods, seven new species are described, viz., five belonging to the genus *Anthropalæmon* (Salter), one belonging to the genus *Palæocrangon* (Salter). These do not differ in any essential respect from the recent Macrurous Decapods, and one belonging to *Palæocaris* (Meek and Worthen)—a genus which, as far as the author is aware, has hitherto only been got from the Illinois Coalfield, in the United States, and is represented by only one species, the *Palæocaris typus* (Meek and Worthen). He proposes to call the present one *P. Scoticus*. This is a most interesting creature, for the carapace extends only over the cephalic region, while the thoracic segments are all free and movable, yet its cephalic appendages and the character of the tail show it to be most nearly allied to the Macrurous Decapods.

### 3. Gaseous Spectra in Vacuum Tubes.

By Piazzi Smyth, F.R.S.E., &c.

(*Abstract.*)

The work described in this paper consists of rather careful measurements, but under low dispersion only, of the spectra of twenty gas-vacuum tubes, generally of different gases and illuminated