*("Challenger" Reports, "*Cirripedia,” 1883, viii. 8-11), gives a brief geological summary down to 1882. In that year J. Μ. Clarke (*Amer. Journ. Sci. and Arts,* 3rd series, vol. xxiv., p. 55) added a new species to *Plumulites* (Barrande, 1872), remarking that the species in question, *P. devonicus, "*is interesting in being the first representative of fossil barnacles from the Devonian, Barrande’s species of *Plumulites* and *Anatifopsis,* as well as the *Turrilepis* of Woodward, being from the Upper and Lower Silurian, and *Plumu­lites jamesi* (Hall and Whitf., *Pal. Ohio,* vol. ii.) from the Hudson River group.” Since *Plumulites* appears to be a synonym of *Turrilepas* (not *Turrilepis),* the species *Turrilepas wrighlii* (Woodward, 1865), from the Upper Silurian of Dudley, did not long enjoy an isolated eminence as the oldest known cirripede. As pointed out by Dr Bather *(Geol. Mag.* 1901, decade 4, vol. viii. p. 521), palae­ontologists themselves have in this branch not very closely followed the progress of their own science, since Dr Ruedemann, in regard to his new *Pollicipes siluricus,* 1901, speaks of "the enormous gap existing between the appearance of this Lower Siluric type and the next Upper Triassic (Rhaetic) representatives of the genera *Pollicipes* and *Scalpellum.''* Many species of *Scalpellum* from the Wenlock shale of Gotland were described in 1892 by C. W. S. Aurivillius, who at the same time founded the species *Pollicipes signatus* on an almost perfect specimen from the Lower Ludlow of Wisby in Sweden. Aurivillius considered that *Pollicipes signatus* showed a closer approach to the Balanidae than any other of the Lepadidae, but he, too, in ignorance of the Devonian *Protobalanus* (Whitf.), dis­coursed needlessly about the gap in the distribution. Dr Bather justifiably anticipates further discoveries, but if, already in Silurian as in modern times, the members of these families had to pass through nauplius and cypris stages to maturity, there is one “ enor­mous gap ” between them and the common ancestor of the crustacean class that will not be. easily filled. To later phylogenetic links an addition is offered by Dr Wood­ward *(Geol. Mag.,* 1901, p. 145), who transfers his *Pyrgoma cretaceum,* 1865, to a new genus *Brachylepas* (fig. 1), and a new family Brachylepadidae, intermedi­ate between the Rhaetic *Pollicipes* and the modern *Balanus.* Among other fossil genera of recent insti­tution, *Archaeolepas, Lepidocoleus, Squama, Stramentum* can only be mentioned as incentives to re­search. Among living forms, added since Weltner’s catalogue, may be noticed *Koleolepas willeyi,* from the Loyalty Islands (Stebbing, in Willey’s *Zool. Results* (1900) pt. v., p. 677.. This was found in a Turbo shell, occupied also by a Pagurid, and coated with Actinians. The cirripede, which has an elastic peduncle, a crested capitulum, but no valves, and the first cirrhi longer than the rest, should stand near *Eremolepas,* the name given by Weltner in place of the preoccupied *Gymnolepas* (Aurivillius). In the genus *Scalpellum, S. giganteum,* Gruvel (*Trans. Linn. Soc.,* 1901) disputes with 5. *stearnsii,* (fig. 2), Pilsbury, 1890, which shall be accounted the greater. . The latter is threatened with a new generic name (Chun, *Aus den Tiefen des Weltmeeres,* 1900, p. 502)

The horizontal distribution of barnacles over all seas is fully explained by Darwin. The bathymetric range of sessile as well as pedunculate forms down to such depths as twelve or eighteen thousand feet—*Verruca quadrangularis,* Hoek, 1900 fathoms; *Scal- pellum regium,* Wyville Thomson, 2850 fathoms—is a more recent discovery. Gruvel *(Contribution à l'étude des Cirrhipèdes,* 1894) found that the species frequenting sea sur­face or shallow water, notwithstanding their feeble powers of vision, cannot live long when entirely debarred from light. It must, therefore, be supposed that abyssal forms have gradually acquired such tolerance of dark­ness as makes their health independent of the sun. Among other singularities of habitat, not the least curious is the freedom with which some small species, especially in the genus *Dichelaspis,* occupy the very jaws of large crustaceans. It is generally stated that cirripedes are confined to salt water, and, generally speaking, that is true. But *Platylepas bissexlobata* (De Blainville), from the west coast of Africa, is sometimes found entirely buried, except its operculum, in the skin of the manatee. Now, since it seems this *Manatus senegalensis* ascends rivers, we may infer that its parasite travels with it. Studer *(Crustacea of the Gazelle,* 1882) records *Balanus amphitrite* (Darwin?) from roots and stems of mangroves in the Congo, where, he says, “ it follows the mangroves as far as their vegetation extends along the stream, to six sea-miles from the mouth.” Darwin notes *B. improvisus* as quite tolerant of water not saline. Why the Thyrostraca, so hardy, so widely dispersed and multitudinous, and with a history so prolonged, should not have made more extended and more independent incursions into fresh water remains a problem. Though the *Ornitholepas australis* (Targioni Tozzetti, 1872), found on the tail feathers of a bird, repre­sents only the cypris-larva of a cirripede, it still shows one of the many facilities for dispersion which these creatures enjoy. A striking instance of their abundance is cited by Aurivillius (1894) from a report by Captain G. C. Eckman, who late in the summer observed great masses of *Lepas fascicularis* forming broad belts in the North Sea. Aurivillius himself examined a humpback whale which had as many as fifty specimens of *Coronula diadema* on each side of its head. He believes that the cetacean approaches not only rocks, but ships, in the hope of freeing itself from its lodgers. Yet the fact that the long, soft *Conchoderma auritum* stands exposed on the *Coronula,* sometimes ten on one, indicates that the whale can have little chance of evicting its tenants, even at the expense of rubbing off the eighteen flattened horns of its own skin embedded in cavities round the domed base of the *Coronula* shell. The fecundity in the genus *Lepas* has struck many observers. Hoek *(“Challenger ” Reports, "*Cirripedia,” 1884, vol. x.) notes that, while in *Scalpellum* the number of eggs may be less than a hundred, “ in *Lepas anatifera* it amounts, on the contrary, to many thousands and tens of thousands.” In the same treatise Dr Hoek has useful chapters on the anatomy, development and sexes of the group, with references to the important researches since Darwin by Krohn, Claus, Kossmann and others. Francis Darwin, in the life of his father (1888, iii. 2), says, “ Krohn stated that the structures described by my father as ovaries were in reality salivary glands, also that the oviduct runs down to the orifice described in the *Mono­graph of the Cirripedia* as the auditory meatus.” Hoek, however, observes that the interpretation of the glands as salivary is not given by Krohn as his own opinion, but only quoted from Cuvier. Hoek himself proposes to call them pancreatic glands.

On the absorbing question of the development, T. T. Groom.*(Phil. Trans.,* 1894, vol. clxxxv.) supplies a full bibliography, beginning with the pioneers Slabber (1778; properly 1769) and J. Vaughan Thomson (1830). Groom’s monograph was almost immediately supplemented by Chun's chapters on the same subject *(Bibliotheca Zoologica,* 1895, Heft 19, Lieferung 2), to which an important dis­cussion is contributed by H. J. Hansen *(Die Cirripedien der Plankton Exp.,* 1899). He insists on the value of the upper lip or labrum for generic distinction, and as an aid in affiliating larval forms of different stages to their several species. He cites Groom’s evidence that larvae obtained from the egg readily go through one moult in the aquarium, and the known fact that the last larval stage is marked by a longitudinal series of six pairs of immovable spines or processes. He considers, then, that by a judicious comparison of larval forms with these two easily determinable stages the. poverty of existing information on the subject may be gradually, if labori­ously, diminished. The large and peculiar *Archizoea gigas of* Dohrn must, he thinks, belong to the Lepadidae as a larva in the last stage, but not, as v. Willemoes Suhm supposed, to *Lepas australis,* or even to the genus *Lepas* at all.

*Thyrostraca anomala.—*This section comprises Darwin’s Apqda, the footless, Lilljeborg’s Suctoria, called by Fritz Müller the Rhizo- cephala or rootlet-headed, and the group to which Lacaze- Duthiers gave the alternative names Ascothoracida, sac-bodied or Rhizo- thoracida, rootlet-bodied. For the present these names may. be dispensed with in favour of their equivalents, the three families Proteolepadidae, Sacculinidae and Lauridae. The first is still limited to the single genus and species *Proteolepas bivincta* (Darwin), parasitic within the sac of another cirripede. Nothing is certainly known of its development, except that the ova are extremely small, but H. J. Hansen *(Die Cirripedien der Plankton-Exp., 1899,* p. 53) argues that various nauplii of a type not previously described may probably be referred to this group or family. The second family, discussed by Delage, Giard, Kossmann and others, has no dearth of genera and species, though about several of them the in­formation is scanty. Almost all of them are. parasitic on other crustaceans. *Sphaerothylacus polycarpus* (Sluiter, 1884) has an ascidian for its host. *Sarcotaces* (Olsson, 1872) has two species parasitic in fishes. But these exceptional and dubious forms do not obtain nutriment by sending rootlets in a rhizocephalous manner into their patrons.. The family Peltogastridae is sometimes separated from the Sacculinidae, and sometimes made to do duty for both, the latter course being improper, since *Sacculina* .(J. Vaughan Thompson, 1836) is not, as has been supposed, preoccupied, and must, therefore, take precedence of *Peltogaster* (Rathke, 1843). In the same family stands the genus *Sylon,* noted by Kröyer with­out a name in 1842, named by him without a description in 1855, described by Michael Sars in 1869, and published by G. O. Sars in 1870. Hoek ("*Challenger" Reports,* 1888, vol. xxiv. app. A) will orientate the English reader on. this genus. For the complicated parasitism of isopods and Sacculinidae on the same hosts Giard and Bonnier *(Bopyriens,* 1887, p. 197) should be consulted.

The remaining family may, till further knowledge, be allowed to cover four remarkable species, three of them resident on Anthozoa, one on an echinoderm. Only the first, the celebrated *Laura*