19. Dimorphic Development and Alternation of Generation in the Cladocera.—Dr. G. O. Sars has discovered a remarkable dimorphism and alternation of generation in Leptodora hyalina. (Om en dimorph Udvikling samt Generationsvexel hos Leptodora, Forhandlinger Vidensk-Selsk., Christiania, for 1873, p. 15, and plate.) The development from the ordinary summer-eggs, as already described by E. P. Müller, is without metamorphosis and like that of ordinary Cladocera, the young when excluded from the egg agreeing essentially with the adult; while, according to Sars’ observations, the young are excluded from the winter-eggs in a very imperfect condition, quite unlike the known young of any other Cladocera, and pass through a marked post-embryonal metamorphosis. In the earliest observed stage of the young of this form, the body is obovate, wholly without segmentation, the compound eye wanting, while there is a simple eye between the bases of the antennulae, the swimming arms (antennae) well developed, and the six pairs of legs represented only by minute processes projecting scarcely beyond the sides of the body; but the most remarkable feature is the presence of a pair of appendages tipped with cilia and nearly as long as the body, which are evidently homologous with the mandibular palpi of other Crustaceans, although these appendages have always been supposed to be wanting in the species of Cladocera. Two subsequent stages, gradually approaching the adult form, are described. The adults from the winter-eggs have no vestige of the mandibular palpi left, yet the simple eye—which is wholly absent in ordinary individuals developed from summer-eggs—is persistent, and thus marks a distinct generation. Three stages of the young from winter-eggs are beautifully figured upon the plate accompanying the memoir.

This remarkable species has, still more recently, been made the subject of a very elaborate memoir by Prof. Weismann of Freiburg (Über Bau und Lebenserscheinungen von Leptodora hyalina, Zeitschrift für wisssensch. Zool., xxiv, Sept., 1874, pp. 349-418, plates 33-38), who, however, had not observed the peculiar development of the winter-eggs. The occurrence of this genus in Lake Superior is noticed in this Journal, vol. vii, p. 161, 1874.

20. Development of the European Lobster.—Dr. Sars has also recently published, in the Proceedings of the same Society for 1874, a paper of 27 pages, illustrated by two autographic plates,
on the post-embryonal development of the European lobster (*Homarus vulgaris* Edwards). He describes and figures in detail the three larval stages corresponding precisely with the first three stages which I have described in the American lobster.* Dr. Sars did not receive my papers until after a part of his memoir was printed, so that his investigations were wholly independent. In a short appendix Dr. Sars calls attention to the remarkable agreement in the results at which we had each arrived, and to the excellent opportunity afforded for a careful comparison of the early stages of these two closely allied species. Although the corresponding stages agree so closely in form and structure, they are from the first readily distinguishable by well marked specific differences in the form and armature of the appendages. In fact, the differences appear greater in the larval stages than in the adults. Dr. Sars was not able to trace the development beyond the third stage, which he had at first supposed could not be the last stage of the larva, but after comparison with the later stage of the American lobster he regards it as quite probably the last true larval stage.

21. *Cumacea from the West Indies and the South Atlantic*; by G. O. Sars. 30 pp. 4to, with 6 plates. (From the Svenska Vetenskaps-Akademien’s Handlingar, Bandet xi; Stockholm, 1873.)—This memoir, in the same form as the one on the Cumacea of the Josephine Expedition previously noticed, contains minute descriptions and elaborate figures of seven species from the West Indies and from off the mouth of the La Plata. Among them there is a remarkable new genus, *Stephanomma*, in which there is a large central eye upon the front surrounded by a circle of smaller eyes.

22. *Distribution of Insects in New Hampshire*; by Samuel H. Scudder. 50 pp. large 8vo, with 2 maps and a plate. (From vol. i of the Final Report upon the Geology of New Hampshire; Concord, 1874.)—Mr. Scudder first discusses the boundary between the Alleghanian and Canadian faunae in the State and then the special relations of the alpine and sub-alpine districts of the White Mountains. He makes the Canadian fauna extend to just south of the White Mountains, while the Alleghanian fauna proper occupies only the extreme southern border, the broad intermediate space—about half the area of the State—being regarded as the “common meeting ground” of the two faunæ. These divisions and the alpine and sub-alpine districts upon the mountains are indicated by colored areas on the two maps. This introductory portion is followed by lists of the Butterflies and Orthoptera of the State, with many valuable notes on the distribution of the species, and a full account of two White Mountain butterflies, *Eneis semidea* and *Brenthis Montinus*.
