been based mainly on the common chick and duckling, yet many forms in other orders have been examined, and in all cases found to agree so closely with the two types specially investigated, that "any statement made for the chick may in all probability be extended to cover the entire group of carinate birds."

The scope and character of the paper may be further indicated by the following transcript of its sub-headings:—

(1) Adult Skin; (2) Development of the Epiderm; (3) Development of Embryo Feathers; (4) Development of Pinfeathers; (5) Scuta; (6) Development of Scuta; (7) Claws; (8) Development of Claws; (9) The Bill; (10) Development of the Bill; (11) Combs and Wattles; (12) Spurs; (13) Toe-pads; (14) Spines of Mouth; (15) Summary; (16) Bibliography. The literature of each special subject is first passed in review, then the adult structure of the part is considered, and finally its mode of development. The morphology of the various appendages is treated in the general 'Summary.'

Many authors have assumed *à priori* that scuta are morphologically identical with the scales of reptiles,—a proceeding our author claims to be 'totally unscientific,' and pronounces the evidence against this view to be overwhelming. Neither are spurs "to be classed as modified scuta, as has been done by those who consider scuta and scales to be the same thing."

The modern view of feathers and hairs is that they are allied structures, though Gegenbauer speaks of them as divergent structures. "It is now known, however, that their early stages are the exact reverse of each other." For various reasons our author "considers feathers and hairs as *distinct* structures." Feathers and scuta are also said to be not homologous; the former originate as papillæ, the latter as folds, and so remain through life. "At no period .... is there the slightest resemblance in form"; while "all the peculiarities of the mucous layer separate the feather from the scale." The "fact that feathers grow upon scuta shows them to be distinct structures."

In closing the author says: "I am well aware that at the present time, when the tendency is to ascribe everything to one common origin, the above conclusions will be distasteful to many. Yet, when examples of the separate origin of like structures—analogous organs—are so abundant, it seems rash to consider a slight resemblance a proof of genetic relationship." The fact that "Amphibians, from which the higher groups have probably been derived, have no special epidermal appendages except perhaps claws," he considers a "strong argument against the identity of any of the avian dermal appendages with those of Reptiles or Mammals."—J. A. A.

Shufeldt on the Osteology of the Mountain Plover.*—This is another of Dr. Shufeldt's osteological monographs, in which a member of the Plover

* Observations upon the Osteology of *Podasocys montanus*. By R. W. Shufeldt, M. D., Captain Medical Corps U. S. Army [etc., etc.]. Journ. Anat. and Physiol., Vol. XVIII, pp. 86-102, pl. v.

family is treated with the customary fullness of detail characteristic of his previous memoirs on various species and groups of North American birds. The beautiful plate gives four views of the skull, two of the sternum, and views of the principal bones of the extremities, all of natural size. The paper is mainly descriptive, but comparisons are made between the species treated and a few allied forms, notably with *Charadrius pluvialis*, from which *Podasocys montanus* presents slight differences in certain bones of the skull.—J. A. A.

Townsend on the Birds of Westmoreland County, Penn.*—"The species enumerated represent perhaps not more than two-thirds of the actual birds of Westmoreland County"; the list being based on rather limited opportunities for observation, and restricted to species 'identified with certainty.' The region embraces a portion of Chestnut Ridge, a range of the Alleghanies, extending through the southeastern part of the county; but this interesting portion of the field is very imperfectly reported upon. The list, numbering 136 species, is rather too sparingly annotated, especially in respect to the season of sojourn of many of the species; but we are led to hope that this may be but the forerunner of a fuller report.—J. A. A.

Bulletin of the Buffalo Naturalists' Field Club.—This, as its title indicates, is the organ of the Club whose name it bears. It is a large octavo publication, under the editorial management of D. S. Kellicott, Eugene E. Fish, and Mrs. Dr. Mary B. Moody. The paper, typography, and press-work are good, and the general appearance of the magazine is attractive. The first five numbers have been received, and are dated respectively January (double number), March, May, and September, 1883.

The publication is devoted to general natural history, and contains excellent articles upon various branches of zoölogy, botany, geology, and anthropology. The first paper in the first number is on the 'Nesting Habits of Birds,' by E. E. Fish, and contains much of interest to the oölogist. Mr. Fish calls attention to the fact that "Several species of birds that nest before the leaves are out, choose evergreens for their first brood, and if a second is raised it is generally in a deciduous bush, or tree." He adds: "Last spring the leaves were late in coming out, and of the first hundred nests that I examined, principally of Robins and Chipping-birds, ninety of them were in evergreens; a month later the number was nearly reversed." A few careless statements have crept in. For example, it is said that the Hummingbird covers the outside of its nest "with little patches of moss." The generic and specific names of the Red-headed Woodpecker are transposed.

In an article upon 'Field Club Work in Western New York,' Professor Charles Linden mentions, incidentally, the occurrence of the "Eider Duck, King Duck, Velvet Scoter, Old Wife, Trumpeter Swan, Snow

* Notes on the Birds of Westmoreland County, Penna. By Charles H. Townsend. Proc. Acad. Nat. Sci. Philadelphia, 1883, pp. 59-68.