Catherine,' descriptions of new Coccids, by T. D. A. Cockerell and A. Hempel, and 'Contributions to our Knowledge of the Spiders of Sao Paulo,' by W. J. Moenkhaus. A. S. Woodward describes several new fishes from the bituminous schists of Taubaté, interesting from the fact that they belong to existing genera, and Ricardo Krone gives an account of 'the Limestone Caves of Iporanga.' The major part of the volume is devoted to a systematic list of 'the Birds of Sao Paulo,' by Dr. von Ihreing, intended as a working basis for the study and discussion of the ornithology of that State. Dr. von Ihering admits 590 species. An alphabetical index of the common names is appended which should be of good service to those interested in the avifauna of Brazil. The volume closes with a bibliography of current works on natural history and anthropology relating to Brazil. Dr. von Ihering records the finding of a dead specimen of *Spheniscus magellanicus* on the coast of the island of Santo Amaro off the coast of Brazil, in about latitude 24° S. A previous example was taken still farther north at Sao Sebastiao island, 23° S.

American Chemical Journal for September, 1899, contains the following articles:

'On alkyl malonic nitriles and their derivatives,' by J. C. Hessler.

'On the phenylhydrazones of benzoin,' by A. Smith.

'Thermal effects of the dilution of some salts,' by F. P. Dunnington and T. Hoggard; 'Preservation of Hübl's reagent,' by R. Bolling; 'Dehydration of crystals of sodium phosphate,' by T. C. Whitlock and C. E Barfield.

'Examination of a Sandstone from Augusta County, Virginia,' by W. W. Miller, Jr.

'Solubility of lead sulphate in ammonium acetate,' by J. C. Long.

'Analysis of Smithsonite from Arkansas,' by W. W. Miller, Jr.

'Desulphones and ketosulphones,' by E. P. Kohler and Margaret B. MacDonald.

'The reaction between sulphone chlorides and metallic derivatives of ketonic esters,' by E. P. Kohler and Margaret B. MacDonald.

J. E. G.

The Osprey for September opens with a brief article on 'Familiar Birds of Honolulu,' by Milton S. Ray, followed by 'Eight Days Among the Birds of Northern New Hampshire,' contributed by John N. Clark, and dealing mainly with the nesting habits of the many species observed. Four short papers deal mostly with various warblers and then, under the head of Notes for 'Observation of Habits of Birds,' Ernest Seton Thompson gives a list of the points that should be particularly noted. F. H. Knowlton and W. F. Henninger contribute letters on the question of excessive egg collecting. Numerous interesting notes and reviews of current literature complete the volume.

THE only scientific and philosophical articles which appear in the October *Monist* are: (1) 'Psychology and the Ego,' by Professor C. Lloyd Morgan, Bristol, England; (2) 'The Man of Genius,' by Professor G. Sergi, Rome, Italy; and (3) 'A Decade of Philosophy in France,' by Lucien Arréat. The remainder of the contents is devoted to a discussion of the Bible, by Professor C. A. Cornill, of Breslau, Germany, Dr. W. Henry Green, of Princeton, N. J., and Dr. Paul Carus.

Appletons' Popular Science Monthly for October, completing its fifty-fifth volume, has as a frontispiece a portrait of the late William Pepper, and includes an article narrating his great activity for the public institutions of Philadelphia and especially the University of Pennsylvania. The number contains an account of the Columbus meeting of the American Association, by Professor D. S. Martin, and a number of other articles including two on the administration of charities, by Bishop Potter and Comptroller B. S. Coles.

SOCIETIES AND ACADEMIES.

THE WASHINGTON BOTANICAL CLUB.

THE eighth regular meeting was held August 2, 1899, a paper by Dr. Gerrit S. Miller, of the U. S. National Museum, on the species of *Apocynum* occurring within the District of Columbia, was presented by Mr. Pollard. Dr. Miller recognizes three new species in addition to the already known *A. androsæmifolium* L., *A. cannabinum* L., *A. medium* Greene and *A.*

album Greene. The paper was illustrated by herbarium material and by samples of the flowers of each species preserved in formalin. While the main characters lie in the shape of the calyx and corolla tube, the habit and foliage of the plant afford good diagnostic points.

Mr. O. F. Cook discussed certain new or little known species of *Amanita*, commenting on their structure and relationships.

The ninth regular meeting of the Club was held September 6, 1899, and was devoted to an informal account of the Alaskan flora by Mr. Frederick V. Coville, who was a member of the Harriman expedition.

Charles Louis Pollard,
Secretary.

DISCUSSION AND CORRESPONDENCE.

ON THE DEFINITION OF GEOLOGICAL TERRANES.

Surprising as it may seem to those who are not professional geologists, it nevertheless with truth may be said that until within the last decade or two there existed little demand for the concise definition of geological terranes and formations. The mere application of a name was almost enough to establish it. In this connection there was often also an enumeration of the common fossils contained, or a somewhat generalized vertical section of the rock layers. One or the other of these features and a knowledge of the typical locality at which the rocks were exposed often enabled the terrane to be subsequently recognized and the title to be used.

At the present time all is changed. With the systematic introduction of local geographic names for the geological terranes, and the general adoption of criteria of discrimination other than those afforded by fossils, there has come to exist an urgent need for more accurate definition of terms. The degree of accuracy now demanded is comparable to that attained in other branches of science. The requirement is for definition based not on trivial or accidental characters, but upon features that are not only really determinative, but recognizable in the field.

The classes of characteristics that require attention are not many, yet in the description of geological terranes it rarely happens that any of these features are clearly pointed out, or when mention is made of them that they are equally compared. When a new name of a rock terrane is formally proposed, about the least thing that its author can do, if he wishes his term to be considered by his fellow workers, is to tabulate the leading characteristics and differences as compared with associated terranes.

In the past there has been little or no necessity for very exact discrimation; hence in using the title suggested by the workers of a generation or more ago we have to do the best we can, giving the pioneers the benefit of all doubts. When titles are applied to terranes now there is cogent demand for formal enumeration of essential features.

Exactly what should constitute a proper definition of a geological terrane may give rise to some differences of opinion. But there should be no variance of views regarding what points should be especially mentioned. Little or no attempt has yet been made to formulate these groups of essential characteristics. They appear, however, to fall naturally under six categories, which may be termed: (1) geographic distribution, (2) topographic expression, (3) lithologic nature, (4) stratigraphic delimitation, (5) biologic definition, and (6) economic content.

1. *Geographic Distribution* is of first importance, as it fixes the terrane in space. The actual area occupied, or the amount of territory over which it forms the surface rock, is largely a function of the present attitude of the rocks. When the beds are horizontal, or nearly so, the surface distribution closely coincides with the original lateral extent. The area occupied is broad. As the degree of tilting increases, owing to orogenic movement that took place after the sediments were laid down, there is a narrowing of the zone until, when the strata stand vertically, it reaches a minimum breadth.

In the definition of a geological terrane the matter of geological distribution is not only of much greater import than it was formerly supposed to be, but it is a factor that is constantly becoming more valuable for the reason that rock units are now being named after