

to London and Berlin, the population of London within the municipal area was 4,200,000, and there were 25,724 instruments, while in Berlin, with a population of 1,578,794, there were 36,620 instruments.

UNIVERSITY AND EDUCATIONAL NEWS.

THE University of Chicago has established a College for Teachers, which has been endowed by Mrs. Emmons Blaine with \$250,000.

PROFESSOR W. LE CONTE STEVENS, of the Rensselaer Polytechnic Institute, has accepted the chair of physics in Washington and Lee University.

DR. CLEVELAND ABBE, JR., has resigned a fellowship in the Teachers College, Columbia University, to accept a chair in Western Maryland College, Westminster, Maryland. Dr. C. C. O'Hara has been elected professor of geology and mineralogy in the South Dakota School of Mines. Mr. Wm. H. Butts and Mr. A. W. Whitney have been appointed instructors in mathematics in the University of Michigan.

DR. ZOGRAF has been elected extraordinary professor of zoology, and Dr. Mrensier, extraordinary professor of comparative anatomy in the University of Moscow.

DISCUSSION AND CORRESPONDENCE.

OBSERVATIONS ON BLUE JAYS.

TO THE EDITOR OF SCIENCE: The nest of an English sparrow was broken up, and four fledglings, nearly ready to fly, were thrown to the ground. A blue jay seized on one and devoured it. One young sparrow was then placed in the nest of the blue jay—presumably the same—along with its own young, and was tolerated, but not fed, by the parent jays. On the second day, however, I observed the jay once feed, perhaps by mistake, the sparrow. For two days the parent sparrows watched their chance when the old jays were away from the nest and came hastily and fed their sparrow, but not the young jays. On the third day the young sparrow flew away from the jay's nest.

While a single incident can hardly form the basis for generalization, yet, as has been sug-

gested to me, the origin of rites of hospitality may be hinted at here. A blue jay devours a young sparrow outside its nest, but tolerates and may even adopt the sparrow placed in its nest. Once within the home nest there is a certain hospitality, which biologically means protection to its own young, for the jay might readily acquire a habit of devouring its own young, if the nest-life did not mean protection. We may surmise that the right of hospitality has its biological significance as a home protection act of the greatest service to the species.

The nest was studied through a telescope placed in a window, and as the eye was brought within a few inches of the nest without disturbing the birds, a little foliage having been removed, a very close study was possible. The male often turned food over to the female to be given to the young. With one beakful several young were fed, the beak being thrust far down the throat and a portion of the food pinched off, and then another portion pinched off in another's throat. The *excreta* were constantly removed, in one case the parent taking *excreta* directly issuing from the young. The parent sometimes took *excreta* far into the mouth and held it for some minutes. The jay often stands on the nest half brooding, and in full brooding it slips its feet to the bottom of the nest with exceeding deftness. A common warning cry is sharp metallic mouí, mouí, in energetically producing which the jay sways his body up and down, vibrating its perch. In excitement it pecks aimlessly at its perch.

The telescopic method might well be used in getting complete studies of nest life. From a house window, or from a platform in a tree, a continuous study of nesting could be made and experiments tried for instinct and intelligence. Certainly for psychological study the method is invaluable, since it gives the close unhampered observation of expression which is the only key to the mind of the bird. A binocular magnifying about fifty times would be generally convenient, though higher and lower powers would often be useful. Leaves, etc., which screen the nest at the point desired, should be removed at night. A powerful glass might reveal the home life of eagles, vultures and beasts of prey. As

giving a fascinating nearness to animals, unconscious of your spying, the telescope is most serviceable in interesting young people.

HIRAM M. STANLEY.

LAKE FOREST, ILL., August 1, 1898.

SCIENTIFIC LITERATURE.

La certitude logique. Par G. MILHAUD. Paris, Felix Alcan. 1898. Pp. 204.

Those who know what expectations were encouraged by scholastic philosophy would hope for much from a book with the present title, whether it intended to defend or criticise the pretensions that have been associated with the study of logic. The scholastics thought that logic was the source of all certitude in knowledge. The present author's thesis is a denial of this claim. His assertion is that logic cannot give us any certitude beyond particular facts directly observed. This position is based upon the law of contradiction, and the distinction between that which is *given* and that which is *construed*. The author attempts to establish his thesis, first directly, and secondly by an appeal to the testimony of mathematics. In neither of his proofs do I think the author successful in maintaining his position. Not that it is false, but because he has tried to give certitude to a proposition by the very method which he says is incapable of doing it. It is in one aspect of the matter a mere truism that logic cannot give any certitude beyond the facts of individual experience, but is in another relation a very equivocal proposition. It implies that somebody has claimed, or does claim, logic is the source of *all* certitude. In the first place, no one since Descartes has claimed this view. In the second place, all first-class thinkers who have attached any value to logic as a means to certitude of any kind limit it to the proof of doubtful propositions, and do not try to supplant experience of simple facts by it. There is an error on the part of logicians and philosophers here which we had hoped that the author would correct. It is true that much of our psychological analysis and past philosophical speculation gives the impression that ratiocination is the most important and perhaps ultimate process in knowledge, assuming all the while that

as a process it was different from the intuitive. But it is possible to show that ratiocination is only one form of intuition, simply that form which serves as a vehicle for the transmission of certitude from one proposition to another, but it is not the primary organ of rectitude. Here was an opportunity for some good discussion of logical processes, but there is no attempt at it. Practically the only reference to logical methods at all is the enunciation of the law of contradiction. The remainder of the work is occupied with discussion upon the application of mathematics to the sciences, and deals with results, not methods.

J. H. HYSLOP.

Le rational. Par GASTON MILHAUD. Paris, Felix Alcan. 1898. Pp. 180.

This work is confessedly a supplement to the work on *La certitude logique*. It professes to discuss more fully the rational processes that are supposed to determine logical certitude, but is in most respects subject to the same strictures that we have applied to the former. The author is better acquainted with the material results of the sciences related to his problem than with the issues involved in logical speculation. Only one chapter looks like an approach to the real question, and even this does not exhibit any conception of what the subject demands. The reasoning of mathematics gave the author the intimation of his problem, but he has not studied the formal processes of logic sufficiently to see what they represent. His primary interest is really in the results of the special sciences, and not at all in methodology. The theme is a most important one at the present time, especially as it affords an opportunity to criticise the implications still remaining in general philosophy after the source of them, namely, the old faculty psychology, has passed away. The old distinction between the rational and the perceptive or immediate consciousness which gave rise to the author's problem no longer exists, and we can reconcile logical certitude with all others.

J. H. HYSLOP.

Flore Phanérogamique des Antilles Françaises, Guadeloupe et Martinique. Par le R. P. DUSSE, Professeur au Collège de la Basse-Terre. Macon. 1897. 8vo. Pp. xxviii + 656.