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(*Edited by D. G. Brinton, M. D., LL. D., D. Sc.*)

Origin and Distribution of Maize in America.

THE best study which has yet appeared on maize, both from the botanical, historical and economic points of view, is one recently published in Vol. I. of the "Contributions from the Botanical Laboratory of the University of Pennsylvania," by Dr. John W. Harshberger.

With regard to its origin, he traces it to the highlands of Mexico, somewhat south of the twenty-second degree of north latitude. He believes that from that point it was introduced into the area of the United States from two sources, from the tribes of northern Mexico and from the West India Islands. The Pueblo and northern Mexican tribes derived it from southern Mexico. It penetrated to South America by way of the Isthmus of Panama, whence it extended southward along the great Andean system until it reached the Gran Chaco, where we find the native tribes, no way related to the Kechuas of Peru, borrowing its name, as they doubtless did the cereal itself, from these cultivated people. South American words for maize extended all over the West Indian Islands, showing that it was introduced to this archipelago from the southern continent.

These results are new and most interesting. The statement that the Caribs introduced it into Florida, and that the Antillean word for maize was found in Florida, or in the area of the Gulf States, is an error derived from old authorities whose assertions are now considered unreliable.

The Caribs.

APROPOS of the questions about the Caribs, their original home and their lines of dispersion (see *Science*, Dec. 27, 1893, p. 361), the whole subject is most ably and satisfactorily presented in the recent volume of Dr. Carl von den Steinen, entitled "Unter den Naturvölkern Brasiliens." It is a handsome book, large octavo, with thirty full-page plates, and 160 illustrations in the text, of 562 pages, and containing eleven vocabularies of the native dialects. It is based upon the author's observations and studies in his second expedition to the head waters of the Schingu River, in the years 1887 and 1888.

Besides the narrative of the expedition, the work contains a very complete anthropological description of the native tribes encountered, especially those of the Carib stock. He sets forth their arts, traditions, mental and physical peculiarities, costumes, etc., with desirable fullness. The question of the primitive home of the Caribs is answered by an admirable linguistic analysis of the numerous dialects of the family, and the changes in phonetics and grammatical forms which they underwent in their long separation from the mother tongue. For this the author was peculiarly well prepared by his patient and fruitful investigations of the Bakairi dialect, probably the most primitive in its form of any, reference to which was made in one of my previous notes (*Science*, Aug. 26, 1892).

Those who wish to obtain the latest and the most trustworthy views about the wonderings of these redoubtable warriors should turn to the pages of this valuable book.

Basque and Berber.

THE ethnic relations of the Basques, who now to the number of a scant half million live in the valleys of the Pyrenees, partly in France and partly in Spain, have long been, and continue to be, a difficult puzzle. (See *Science*, July 7, 1893.)

The latest attempt to unravel them is by the Professor G. von der Gabelentz, whose recent loss to science is so regrettable. In an article which was issued in the proceedings of the Prussian Academy of Sciences, in 1893, entitled "Baskish und Berberisch," he institutes a comparison between these two languages and claims to show that Basque is a Hamitic tongue, related to the Berber dialects of north Africa. He believed that this relationship had not heretofore been maintained, which is an error, as so far back as 1876 Dr. Tubino, of Madrid, in his "Aborigines Ibericos," compared the two idioms for the same purpose.

Several of the analogies presented by both these writers are certainly so close and so striking that it seems unreasonable to attribute them to chance; but if they are real, do they establish the claim of a descent of the Basque from the primitive Hamitic stock? No; because they are of such a character that they might well have belonged to the class of loan-words and have been borrowed from the large colony of Berber descent which there are cogent reasons to believe peopled much of the Iberian Peninsula in remote semi-historic times. The modern Basque has borrowed enormously from French and Spanish, and so did ancient Basque from Berber and Celtic dialects.

Micmac Studies.

THE late Rev. Silas T. Rand was for forty years a missionary among the Micmac Indians of Nova Scotia. He was a versatile linguist and acquired a more thorough knowledge of their language, traditions and mode of life than any white man had previously attained. In the later years of his life he compiled an extensive dictionary in two parts, Micmac-English and English-Micmac. The Government of the Dominion undertook its publication, but the author died after the first part only had passed through the press. The second part remains in manuscript in the possession of the Dominion Government, and it is not likely to see the light in print for a long time to come, if ever.

Mr. Rand took especial pleasure in collecting the tales, legends and myths of the tribe from the old men and women who recollected them from a long time back. He

wrote these down word for word from the lips of the narrators in their native tongue, and at his leisure afterwards translated them into English. Some of them were obtained by the distinguished folk-lorist and poet, Charles G. Leland, and published in his "Algonquin Legends." A much larger collection of them, filling a volume of 452 pages, has just appeared in the Wellesley College Philological Publications, entitled "Legends of the Micmacs," with a most satisfactory preface by Miss Helen L. Webster. It is a work the reading of which is both delightful and instructive, and it leads us far into the psychology of these children of nature. The original Micmac of most of these tales is still in existence, and should some day be printed for its linguistic value.

PLEA FOR TEACHING THE HISTORY OF MATHEMATICS.

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THE time alloted in our schools for the study of political and general history, as is well known, is all too short. Doubtless many teachers on seeing the title above would be disposed to say that it is well enough, but how can the teacher of mathematics find time for it? And, besides, if a little history is a good thing in the mathematics, why would it not be equally desirable in language and science? A fair answer to the latter question presents itself, viz.: Perhaps it would.

It is not surprising that the history of mathematics is neglected in the common schools, because the normal and training schools do not concern themselves with it. The latter have some excuse for this course, since the colleges, from whence they draw their teachers, either pay no attention to it, or only the scantiest, and that indirectly. It is fair to suppose that in a large number of cases the college student of to-day gets his knowledge of Greek mathematics, not from the mathematical department, but out of his Greek studies, and in a crude and confused form. He knows, or, of course, ought to know, that the elementary geometries in use now are merely Euclid's in substance, superior to Euclid's in some ways, but in others less logical. If he were asked to describe the Greek mathematics, or to tell when algebra was first cultivated, it is doubtful whether he could give any satisfactory answer. Indeed, some very interesting statistics could no doubt be secured if these and a few other like questions were put to the seniors in our various colleges. It is doubtful whether the majority would know whether algebra was studied first in the fourth or fourteenth century, or whether trigonometry was cultivated for its own sake at first or as an auxiliary to another science, and if the latter, what science? That effect, whether great or small, the invention of cartesian co-ordinates had on the development of geometry? Whether our present notation in algebra was fixed by a few or by many hands? Or the answers to numerous questions as important as these. Those who had traversed the ground of a good history, besides securing a much clearer comprehension of subjects they had taken years to learn, would have become acquainted with the evolution of a branch of science from humble beginnings and with slow steps, and indirectly would have had a good sidelight thrown on general history.

Even in our universities, if one may judge by the courses set fourth in their catalogues, there is no distinct provision or requirement to secure a knowledge of the history of mathematics, *and so it would seem just to charge neglect of the historical and unifying side of the study of mathematics all* along the line of our educational system. Of course there are exceptions to this. Cajori in his "History and Teaching of Mathematics in the United States" (page 163) says: "One feature of the mathematical instruction at this institution [Princeton] that has been in vogue during the last ten years (perhaps longer) is, we think, to be recommended for more general adoption. Considerable attention is given to the study of the history of mathematics. The writer has before him examination papers, written in answer to questions set by Halsted in 1881. From the answers we infer that questions like these were asked: Who wrote the first algebra that has come down to us? What was its nature? What part did the Hindoos play in the development of algebra? Its growth during the Renaissance? The laws underlying ordinary algebra? etc." The same book gives the following in the mathematical courses in the University of Texas, where Professer Halsted now is: "In the higher classes will be discussed the history and logical structure of the mathematical sciences." Lectures on the history of mathematics are given also at the University of Virginia. No doubt other instances might be found of historical courses offered, but on the whole this is the exception. It seems scarcely necessary to criticise this condition of affairs, as I presume almost anyone would agree that it is unfortunate. It is likely that it is due to the fact that each professor is a specialist and is unwilling to take from his own work the time necessary to prepare such a general course.

The present seems an opportune time to bring forward the claims of this special study, since a new history of mathematics by an American author (Professor Cajori) is soon to appear from the press of Macmillan & Co. So far as the writer knows, it will be the first of its kind to be brought out in this country. It is to be hoped that if the book proves worthy, which it no doubt will, it will have a large sale among college professors, and also among teachers of more elementary mathematics. It will be a mistake for the latter to conclude that they can make no use of such a book. For along with enlarging their views of mathematics, they will find many facts of interest, many old principles new to them, some ideas of prime importance for the proper teaching of scientific geometry, algebra, trigonometry, and analytics, and much material—some stories, perhaps—that may be used to break the monotony of class-room routine. A teacher who does not know what was the controlling idea in the Greek geometry, or one who has never appreciated the difficulty met with in the study of incommensurables, or in attaining a satisfactory theory of parallels, is hardly in position to teach elementary geometry as it should be taught. Many of the results of mathematics, dry and abstract though they may seem from one standpoint, are yet full of interest when viewed as a part of the development of the subject, or when the circumstances under which they were discovered are known. Sometimes a knowledge of the personality of an author of a work, or a demonstration or problem, adds interest to its study. The stories concerning the legend over Plato's door, Archimedes and the Roman soldier, and Newton's apple, are not the only ones that may be related even of these men,—may their shades forgive us for having harped on them so long,—for one and perhaps two of them are apocryphal. But one of the best results of a study of this history by the teachers of elementary mathematics would be the enlarging of their mathematical horizon. Too many even at the present time think that the mathematics that lies beyond a knowledge of the elements of the calculus as set forth in our ordinary college courses is of a transcendental and non-useful character. It is safe to say that by as much as a teacher's vision is widened and clarified, by that much is he made a more intelligent and capable instructor. We enter a plea therefore for a better knowledge of the history of mathematics, hoping thereby to secure a better knowledge and teaching of the subject itself.