chipping sparrow, but still the latter quit nesting in my yard before the former commenced.

I put up boxes which were formerly occupied by bluebirds. As soon as the sparrows nested in my yard they took possession of these boxes; and when the blue birds came they did not have the grit or strength to turn the intruders out, and they went elsewhere to nest. After nesting time they are seldom seen in the city during the summer. Very clearly the sparrows have driven the blue birds out of this part of the city, and possibly the chippees; but if they have affected any other kinds, my obervation has not been keen enough to detect it, though I have had my attention directed to it for years. F. A. SAMPSON.

Sedalia, Mo., July 25.

On Maya Chronology.

IN a former communication, answering Professor Cyrus Thomas's "Brief Study of the Palenque Tablet," I stated that the theory brought forward by Professor Förstemann, that the Dresden Codex does not count the days from the first of the given month but from the last of the preceding month, is to be put aside. Professor Förstemann's theory is based on the supposition that the calendar system of the Dresden Codex was the same as that which prevailed in Yucatan at the time of Bishop Landa's writing. This supposition, however, is an erroneous one. In the "Zeitschrift für Ethnologie," Vol. XXIII., I have shown that the priests who wrote down the Dresden Codex did not begin their years with the signs *kan, muluc, ix, cauac,* as in Landa's time, but with the signs *been, e'tznab, akbal, lamat,* exactly corresponding to the signs used by the Mexicans to designate their respective years. Beginning the years in this manner, the day 4 *ahau*, 8 *cumku*, is really the eighth day of the month *cumku* in the *been* or "cane" years, and conformingly all the other dates throughout the whole Dresden Codex.

I wish to call attention to a passage of the Chilam Balam of Mani which seems to confirm my opinion. It is said there (Brinton, Maya Chronicles, p. 98): "In the Katun, 13 *Ahau*, Ahpula died. It was in the course of the sixth year before the ending of the katun, as the counting of the years was in the east, and (the year) 4 *Kan* seated upon the throne, on the 18th day of (the month) *Zip*, on the day 9 *Fruix*, Ahpula died." Now it occurs only when beginning the count with the first day of the month, that a day 9 *Fruix* is the 18th day of the month *Zip*. And, indeed, in the year that begins with the day 4 *Kan*, the day 9 *Fruix* is the 18th day of the month *Zip* — beginning the count with the first.

Here, therefore, we have the same designation of a date by the sign of the day and the position it holds in the number of twenty, or a Maya month, as in the Dresden Codex. It seems scarcely probable that the natural manner of counting seen in the passage of the Chilam Balam, quoted above, should be replaced in the Dresden Codex by another and wholly unintelligible one.

DR. ED. SELER.

Steglitz, July 24, 1892.

The Palenque Tablet.

ALLOW me to say in reply to Dr. Seler that I did not "follow Dr. Förstemann" in regard to the peculiar method of counting days in the Dresden Codex. I had discovered this peculiarity before I was aware that anyone else had noticed it, and have now an unpublished article on the series, — Pls. 46–50, — based on that method, which was prepared some time ago. While at work on this paper the thought occurred to me that the series might be based, as Dr. Seler supposes, on a calendar in which the years commenced with *Been, Ezanab, Akbal, and Lamat*, and a table was prepared on this theory.

I quote from that paper my reply to the suggestion. After noting the fact that the count began with the last day of the month, I remark, "It might be argued from this that the years and months began with what have been considered the last days, but for the fact that all the historical evidence is against such a conclusion, and, as can be shown, a full and complete explanation of this series can be given without resorting to this theory."

There are also some difficulties in the way of this theory. Pushing back the series one day is a very simple process; but it will sometimes throw dates in the five added days which do not belong there, and would break the continuity of the Katunes and cycles. Moreover, I think this custom of counting from the last day of the month will explain the reason for commencing the numbering of the Katunes with 13.

I think it quite probable that, if Dr. Seler will attempt to trace out on his theory the three long series on Plates 46–50, each running through 104 years, he will find that it will fail to work. If not, then it is immaterial, except as regards the succession of the epochs, whether we count the commencing days the last or first of the month.

As this theory is wholly unnecessary to explain the peculiarities of this Codex, and as Plates 25–28 appear to be based on the method of counting from the last day of the month, I see no good reason for adopting it.

Dr. Seler thinks my statement that day-numbers were not attached to month-symbols on Plates 48 and 50 of the Dresden Codex when the number was 20, is erroneous, and calls attention to certain characters which he believes are symbols for this number. The little characters he alludes to are certainly present, and, as they are not parts of the month characters, may be intended to denote the fact that the month is completed. But it is difficult to explain on his supposition the fact that the symbol on Plate 48 to which this sign is attached is that of the month *Yax*, when the date is 11 *Eb*, the twentieth day of *Chen;* and one of those on Plate 50 is the symbol for the month *Pop*, when the date is 11 *Ik*, the twentieth day of *Cumhu*. In other words, the symbol in each case is of the month following and not that to which the twenty days apply. His explanation therefore fails to solve the difficulty, and cannot as yet be accepted as fully satisfactory; nevertheless, it must be admitted that these added characters have some reference to the completion of the month.

His interpretation of the open-hand symbol by *pax*, "to beat," appears to be erroneous, as there is nothing connected with it representing the phonetic element *p*. CYRUS THOMAS.

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BOOK-REVIEWS.

On the Modification of Organisms. By DAVID SYME. Melbourne, George Robertson & Co. 8°.

ON account of the many questions dealt with in this book, it is difficult to do justice to its contents within our limits. The prime object of Mr. Syme's clearly-written and forcible work is to show the falsity of the theory of natural selection, and to present another hypothesis to explain the cause of the modification of organisms. The greater part of the volume is taken up with criticisms of Darwin's statements and method of exposition, and the author's ideas as to the true cause of modifications are not brought forward till near the close of the work.

They are embodied in what may be styled the doctrine of "cellular intelligence." "The cell is the biological unit," Mr. Syme asserts. "It is the irreducible vital entity; it is the seat of life and energy; it is the key that unlocks the mystery of organic modifications" (p. 142). But it is more than this. It is the element which "feels, thinks, and wills" (p. 144). In other words, it is intelligent.

Startling as this doctrine is, the author does not hesitate to claim for it a wide application. In the movements of the stamens and pistils of flowers, the selection of grains of sand by rhizopods, and the healing of wounds, he sees the operation of this "cellular intelligence."

Modifications of organisms are brought about by the stimulating influence of external conditions. "These conditions, if uniform, pronounced, and prolonged, will, according to their nature, invariably incite the organism to change in a definite direction." Mr. Syme holds that modifications result from the action of the organism itself and not from any direct influence of environment. Hence he rejects the terms "use" and "disuse," which mean only "function and its absence," and prefers to say that modifica-