ers, proofreaders and public. Also in recent technical papers of my own it has been omitted. One of these[1] dealt with some 250 species and had a fairly wide distribution. After six years, no one has complained. Moreover, I have discussed the matter with various zoologists and do not find them inclined to offer defense unless on grounds of pure conservatism.

Typographically the parentheses are not desirable. They often mar the appearance of the printed page, and they are always anathema to the proofreader. Some amusing incidents have occurred. In one case, a very competent proofreader, finding some names with and some without parentheses, very carefully supplied the omissions and the change was not detected until final proofs were reviewed. In a very recent publication[2] the proofreader or editor completely triumphed. Here every one of nearly 150 authorities is carefully placed not in parentheses but in brackets, obviously without the knowledge or consent of the author.

Since the foregoing was written, I have read two recent communications to SCIENCE[3] discussing related subjects. Like Dr. Jacot, I agree with Mr. Peattie that single authorities are sufficient, and the fact that zoologists find them so seems pretty good evidence. However, it may be readily conceded that botanists at this time, having a different historical background, may wish to retain the double authorities for good reasons which do not apply in zoology. To change the single authority to the maker of the combination as advocated by Mr. Peattie would be highly impractical for zoologists at this late date. Some of the arguments he makes for it were discussed in the Stricklandian code of 1842, previously mentioned. Since then all the emphasis has been upon the original describer of the species, who has been thoroughly indexed and docketed, while the maker of the combination has been given scant recognition. In connection with Mr. Peattie's zoological example, it is fair to assume that the same authority which informed him that *Butorides virescens* is the current name for the green heron would also give him chapter and verse relative to the original Linnaean name *Ardea virescens*. This authority naturally would be the Checklist of the American Ornithologists' Union. In other words, it would be practically impossible for him to obtain the combination from a really authoritative source without also finding the original reference.

It may be that both botanical and zoological practices are due for great changes in the future; but unless zoologists are willing to make a beginning by such a change as dropping the superfluous parenthesis, it will be more than the hundred years suggested by Dr. Jacot before much progress is made.

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[1] *Field Mus. Zool. Ser.*, 18: 193–339, August, 1932.
[2] Dixon, "Birds and Mammals of Mount McKinley National Park," U. S. Department of the Interior, National Park Service, Fauna Series, No. 3, 1938.
[3] Peattie, SCIENCE, 88: 128, August 5, 1938; and Jacot, 88: 240, September 9, 1938.

ESKIMO SEXUAL FUNCTIONS

WHITAKER, in his recent note on Eskimo sexual functions,[1] quotes some interesting data from Bertelsen[2] regarding the age at menarche among these people, and raises again the much discussed question as to the reliability of Dr. Cook's reported observations a half century ago.[3] Bertelsen now finds the age at menarche to be 15½ years, while a half century ago Dr. Cook stated that it occurred at the age of 19 or 20 years. And a century ago MacDairmid[4] said that the menses did not begin until about the age of 23 years. Because of the wide variance in these reports, must we discard the earlier ones as unreliable, and accept only the recent one based on carefully collected statistics? May there not have occurred among the Eskimos the same marked progression of the menarche toward earlier ages that has been witnessed in many other regions of the earth during the last century?

Original masses of statistics recently calculated by the author[5] gave mean ages at onset of the menses as follows:

Germany, Göttingen,	1795	16.6 years
Munich,	1864	16.3 "
Munich,	1880	15.4 "
Giesen,	1920	14.5 "
Norway,	1868	16.1 years
	1935	14.5 "

U. S. A., Cincinnati

Age of Women (1935) (Years)		Mean Menarchial Age (Years)
24	under 20	13.13 ± 0.22
78	20–29	13.77 ± 0.11
125	30–39	14.09 ± 0.10
118	40–49	14.29 ± 0.11
97	50–59	14.75 ± 0.14
62	60–69	14.76 ± 0.14
48	70–79	14.67 ± 0.17
22	80–89	14.77 ± 0.34
1	91	in her 15th year.

Philippine Islands, Cebu (1935)

64	under 20	14.48 ± 0.11
65	20–29	15.59 + 0.14
76	30 +	15.71 ± 0.11

Similar findings have been obtained from many countries and from different races, always showing a progressively earlier onset of the menses. Girls entering the Universities of Cincinnati, Southern California and Wisconsin have exhibited a reduction of menarchial age from over 14 years for those born before 1900,

[1] Wayne L. Whitaker, SCIENCE, 88: 214, 1938.
[2] A. Bertelsen, *Meddelelser om Grønland,* Bd. 117:nr. 1, 1935.
[3] F. A. Cook, *Trans. N. Y. Obstet. Soc.*, 1893–4.
[4] E. M. Weyer, "The Eskimos," p. 48, 1932.
[5] C. A. Mills, *Human Biology,* 9: 43, 1937.

down almost to an even 13 years for those born in 1918. This march toward ever earlier menarchial age seems to be a world-wide phenomenon no longer subject to question.

The earlier development of menstrual functions has been accompanied by a steady and marked improvement in growth and adult stature, an improvement found in practically every population mass for which growth statistics have been examined in recent years. In animals, also, it has been pretty well established that the time of onset of sexual functions is determined more by the stage of physical development than by chronologic age. More rapid growth in animals, as in girls, is associated with earlier onset of sexual functions.[5, 6, 7, 8] The change in menarchial age so universally observed in many countries and races may therefore well be regarded as only one phase of the general world-wide quickening and improvement in the physical development of man.

In the light of this more general view of the facts available, would it not perhaps be better to place more reliance on the observations of MacDairmid and Cook, even though they are unsupported by actual statistics? It may be that the menarchial age for these Eskimos did change from nineteen down to fifteen and a half years during the last half century. Such would be an 18 per cent. reduction, as against the 11 per cent. witnessed in Germany up to 1920.

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ERYTHROCYTES OF SLOTH

IN a recent article appearing in SCIENCE,[1] entitled "Elliptical Erythrocytes," Dr. M. C. Terry has expressed hope "that some one who is in a position to do so will tell us who is right about the erythrocytes of the sloth." The point in question concerns the actual shape of the erythrocytes.

During the past year while a research fellow in the laboratory of histology under Dr. H. E. Jordan, we had an opportunity to study the blood elements of the two-toed Panamanian sloth (*Choloepus hoffmanni*). A number of these animals had been secured and transported to Virginia for study by Dr. S. W. Britton, who in turn furnished us with material for future investigations.

Study of freshly drawn blood, blood smears and bone marrow smears has reassured us that Jordan was correct in his statement that "among mammals the shape of the red blood corpuscles is uniformly that of a circular biconcave disk, except in the Camelidae, where these elements have an elliptical shape." In smear preparations of blood, as well as in stained sections of various tissues of the sloth, erythrocytes are frequently distorted, while many of the less distorted ones present an elliptical shape. In blood smears of both the cat and rat, similarly distorted erythrocytes having an elliptical shape are frequently observed. Any deviation from the circular shape of red blood corpuscles among these animals, as observed in prepared material, is unquestionably due to external factors.

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SCIENCE IN THE OLD SOUTH

IN an article entitled "Science and Society in Ancient Rome," Dr. William Salant[1] in advancing the view that society determines the growth or the decline of science, states: "As Kofoid[2] pointed out in a recent article, science worthy of the name scarcely existed in the South before slavery was abolished."

Dr. Kofoid's article is a review of a book entitled "Scientific Interests in the Old South," by Dr. Thomas Cary Johnson, Jr., associate professor of history in the University of Virginia. Dr. Kofoid states: "The author's theme is the *refutation of the summary indictment* of Morrison in 'The Oxford History of the United States,' volume 2, page 15, of the 'non-existent intellectual life' of the South, due to the cultivation of cotton, the neglect of men and the blight of slavery. *The data assembled support his defence,* for they display a wide-spread and active interest in the physical, chemical and medical fields, and a considerable though desultory activity in the natural sciences." (Italics mine).

Among the little-known facts brought out by Professor Johnson are the following: William Barton Rogers, founder and first president of the Massachusetts Institute of Technology, which opened its doors to students (including women) in 1865, succeeded his father, P. K. Rogers, in 1829 as professor of natural philosophy and chemistry at William and Mary College, and from 1835 to 1853 served as professor of natural philosophy and geology at the University of Virginia. On December 11, 1787, James Rumsey of Virginia ran a steamboat of his own invention against the current of the Potomac River at a speed of four miles per hour. Cyrus McCormick, of Pocahontas County (then in Virginia), invented, made and sold his reaper on his father's farm there from 1839 to 1844. Immediately following the opening of the Baltimore and Ohio's first division in 1830, came the Charleston-Hamburg (S. C.) line, with the *Best Friend of Charleston,* the first locomotive made in America for

[6] Carl G. Hartman, SCIENCE, 74: 226, 1931.

[7] Frank K. Shuttleworth, Monographs of the Society for Research in Child Development, National Research Council, Vol. II, No. 5 (Serial No. 12), Washington, 1937.

[8] Cordelia Ogle, *Amer. Jour. Physiol.*, 107: 628, 1934.

[1] SCIENCE, 88: 475, November 18, 1938.

[1] *The Scientific Monthly,* December, 1938.

[2] SCIENCE, 88: 109, 1938.