

The Role of Feet in the Struggle for Existence

MAY not the "set" of the feet in various races of men have played a not unimportant part in the struggle for existence? In thinking over the subject the following points have occurred to me, and perhaps some of your readers may be able to throw some further light on the question.

In the case of the North American Indian, for example, except that he wears soft mocassins instead of stiff boots, he is less in a state of nature as regards his feet than we are. For we, and all the Teutonic tribes for countless generations, have paid little regard to our feet except as instruments of unconscious progression or as pedestals on which to stand firm. The North American Indian, on the contrary, is obliged by his habits of life, and has been obliged for hundreds, perhaps thousands of years, to direct his particular attention in no small degree to the position of his feet. For in hunting it is of the greatest importance that he shall not tread on any rotten stick which may snap with a loud noise and alarm the game of which he is in pursuit. On the war track it is of equal importance that he shall deceive his enemies as to the number of his party, and so each man carefully steps in the footprint of the warrior who had preceded him. This, I should think, would be decidedly easier if the foot were kept pointing straight fore and aft than if it were held obliquely. This may be more evident from the three rough outlines I have drawn of footprints in each position, in which I have made the difference in the length of the stride much the same. Indeed, the difference is greater in the fore and aft one, and yet the impression made by the three footprints will not be so large as when the foot is oblique. In walking in



snow-shoes, too, the feet must be held as nearly as possible parallel, as otherwise the shoes are apt to catch in each other and trip their wearer up. It seems quite possible that long-continued attention to the position of the feet for many generations, together with the advantage which a parallel position of the feet may have conferred in the struggle for existence, may have led to its becoming a permanent characteristic of the Red Indian; while the advantage which the outward direction of the feet may have given the old Saxon, by affording a firmer support in a hand-to-hand struggle, may have led to its permanence in the successors of those who possessed this peculiarity, and by its means enabled them to overcome their opponents.

I cannot be quite sure about the ancient Egyptians. If I remember rightly, the Farnese Hercules has toes pointing considerably outwards, while Mercury generally has his feet more or less parallel. This would indicate that the Greeks associated the former position with strength and firmness, and the latter with fleetness. As fleetness will also aid the North American Indian in the struggle for existence, it is possible that its association with a parallel foot may have something to do with the peculiar formation of his ankle-joint. This, however, leads us to the question which I do not think has ever yet been taken up: In what way does the possession of a certain kind of weapon and the use of particular methods of warfare influence the conformation of the body? Have the descendants of the Teuton tribes toes which point outwards because their forefathers used clubs, axes, and targets, and have the Red Indians of the present day parallel feet because their forefathers used arrows and keen tomahawks, and trusted to agility rather than to brazen studs and thick bull-hide for escape from the blows of their adversaries? X.

Destruction of Flowers by Birds

A WELL-OBSERVED case of the destruction of primrose flowers by birds will perhaps be of interest to some of your readers.

The flowers of two plants of primrose at a short distance from a window have during the last few days been almost entirely destroyed; and this having drawn attention to the subject, they have been watched. The result is that a number of the common house-sparrows have been seen to peck off the flowers by cutting them through at the base of the tube of the corolla, so as to remove the ovarium. In some cases the flower has not been completely detached from its stalk, a ragged hole being left where the ovarium originally was placed, but the flower has never been subject to any further dismemberment. The few

flowers which have been left on the plants, when chewed in the mouth, do not seem to have any sweetness about them, and one would therefore suppose that they do not contain any appreciable quantity of nectar.

The inference from these observations seems to be that the sole object of the destruction of the flowers is to obtain the ovaria. It is also to be observed that the primrose is not indigenous to this part of the country, and the only plants within a radius of at least two miles are those cultivated in gardens. The cowslip is, however, very abundant, but I have never noticed any similar destruction of it. I shall, now the cowslips are coming into flower, watch them with the object of finding out whether they are attacked or not.

H. GEORGE FORDHAM

Note on the Common Sole

IN looking over Mr. Buckland's last work on "British Fishes," I did not find any account of the power the Sole has of fixing itself against the glass of an aquarium by means of a sucker placed close to the mouth, on the lower side; and as I find it is one of the "things not generally known," I think it may be worth your notice, particularly as I have not remarked it at the Brighton Aquarium. I first observed the fact at the Havre Aquarium, where I pointed it out to many persons hitherto unacquainted with it, but I have been disappointed at not seeing it at Brighton during any of my visits. The only way I can account for this difference in the habits of the same fish is that the Brighton Soles being, during my visits, always in the light, lay quietly at the bottom, whereas those at Havre, being almost excluded from the light, were seen to much greater advantage, swimming about freely and attaching themselves to the glass when they came in contact with it, or sliding down to the ground. The sucker of a Sole nine inches long would be about  $\frac{3}{4}$  inch by  $\frac{1}{2}$  inch, placed diagonally to the long diameter of the fish, and exhibiting fine radiating lines. Though I watched other flat-fish carefully, I never could detect any attempt in them to fix themselves against the glass when they struck it, and therefore I am quite unable to explain why the Sole alone should have this power. As I make no pretension to be an ichthyologist, it is very probable that I may be telling a thrice-told tale. I must therefore leave it to your judgment to decide whether it is worth your notice in NATURE.

Eastbourne

T. OGIER WARD

Colour in Goldfinches

LAST July I took a goldfinch's (*Carduelis elegans*) nest with five young birds in it out of a tree in my garden and brought them up. Four turned out to be properly marked specimens, but the fifth is almost black, only having a few red feathers on its head. I see in Bechstein's "Cage Birds" (third edition), p. 147, that "four young ones of this variety were found in the same nest." Now, why were not all my five specimens black, and what is the cause of the fifth's blackness? Can any of your readers say? Manley, May 1

LUCIE WOODRUFFE

OUR ASTRONOMICAL COLUMN

VARIABLE STARS.—The two following stars require further examination, as affording signs of fluctuating brightness. (1) Lalande 23228-9, estimated 7th magnitude, 1795 May 8, and 5 $\frac{1}{2}$ , 1798 March 14. It is 6.7 in Lamont (No. 1149), and in Steinheil's Chart, one of the series published by the Berlin Academy, it is only 8th mag. Neither Bessel nor Santini has observed it. (2) The star Lalande 27095, in Boötes, 7th mag., observed 1795 May 25, and missed by Olbers, 1804 March 22, during his observations of the comet of that year: it is the star which passed the centre wire at 14h. 42m. 10s. (Histoire Céleste, p. 164), and Olbers distinctly says of it "ist nicht mehr am Himmel zu finden." It was, however, observed by Bessel in his Zone 415, 1828 May 24, as a 9th magnitude; it is 9.0 in the "Durchmusterung," and is called 9.1, 1866 June 5, in the Bonn Observations, vol. vi. The positions of these stars for 1875.0 are:—

(1)	R.A.	12h. 18m. 45s.	N.P.D.	100° 54' 9"
(2)	"	14 45 54	"	52 6 3