

BIOLOGY

"Darwin's Point" and Other Rudiments

"A Classic of Science"

Pointed Ears and a Woolly Coat Apparently Accompanied A Keener Sense of Smell in Man's Pre-Human Ancestors

THE DESCENT OF MAN, and Selection in Relation to Sex. By Charles Darwin. In two volumes. London: John Murray, 1871.

THE CELEBRATED sculptor, Mr. Woolner, informs me of one little peculiarity in the external ear, which he has often observed both in men and women, and of which he perceived the full signification. His attention was first called to the subject whilst at work on his figure of Puck, to which he had given pointed ears. He was thus led to examine the ears of various monkeys, and subsequently more carefully those of man. The peculiarity consists in a little blunt point, projecting from the inwardly folded margin, or helix. Mr. Woolner made an exact model of one such case, and has sent me the accompanying drawing. These points not only project inwards, but often a little outwards, so that they are visible when the head is viewed from directly in front or behind. They are variable in size and somewhat in position, standing either a little higher or lower; and they sometimes occur on one ear and not on the other. Now the meaning of these projections is not, I think, doubtful; but it may be thought that they offer too trifling a character to be worth notice. This thought, however, is as false as it is natural. Every character, however slight, must be the result of some definite cause; and if it occurs in many individuals deserves consideration. The helix obviously consists of the extreme margin of the ear folded inwards; and this folding appears to be in some manner connected with the whole external ear being permanently pressed backwards. In many monkeys, which do not stand high in the order, as baboons and some species of macacus, the upper portion of the ear is slightly pointed, and the margin is not at all folded inwards; but if the margin were to be thus folded, a slight point would necessarily project inwards and probably a little outwards. This could actually be observed in a specimen of the *Ateles*

beelzebuth in the Zoological Gardens; and we may safely conclude that it is a similar structure—a vestige of formerly pointed ears—which occasionally reappears in man.

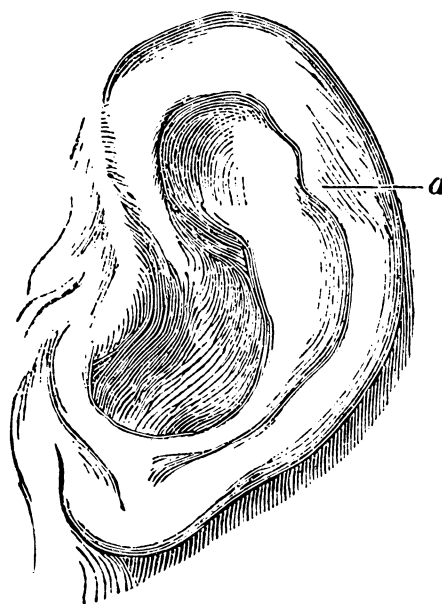
The nictitating membrane, or third eyelid, with its accessory muscles and other structures, is especially well developed in birds, and is of much functional importance to them, as it can be rapidly drawn across the whole eye-ball. It is found in some reptiles and amphibians, and in certain fishes, as in sharks. It is fairly well developed in the two lower divisions of the mammalian series, namely, in the monotremata and marsupials, and in some few of the higher mammals, as in the walrus. But in man, the quadrumania, and most other mammals, it exists, as is admitted by all anatomists, as a mere rudiment, called the semi-lunar fold.

Of Highest Importance

The sense of smell is of the highest importance to the greater number of mammals—to some, as the ruminants, in warning them of danger; to others, as the carnivora, in finding their prey; to others, as the wild boar, for both purposes combined. But the sense of smell is of extremely slight service, if any, even to savages, in whom it is generally more highly developed than in the civilized races. It does not warn them of danger, nor guide them to their food; nor does it prevent the Esquimaux from sleeping in the most fetid atmosphere, nor many savages from eating half-putrid meat. Those who believe in the principle of gradual evolution, will not readily admit that this sense in its present state was originally acquired by man, as he now exists. No doubt he inherits the power in an enfeebled and so far rudimentary condition, from some early progenitor, to whom it was highly serviceable and by whom it was continually used. We can thus perhaps understand how it is, as Dr. Maudsley has truly remarked, that the sense of smell in man "is singularly

effective in recalling vividly the ideas and images of forgotten scenes and places;" for we see in those animals, which have this sense highly developed, such as dogs and horses, that old recollections of persons and places are strongly associated with their odour.

Man differs conspicuously from all the other Primates in being almost naked. But a few short straggling hairs are found over the greater part of the body in the male sex, and fine down on that of the female sex. In individuals belonging to the same race these hairs are highly variable, not only in abundance, but likewise in position: thus the shoulders in some Europeans are quite naked, whilst in others they bear thick tufts of hair. There can be little doubt that the hairs thus scattered over the body are the rudiments of the uniform hairy coat of the lower animals. This view is rendered all the more probable, as it is known that fine, short, and pale-coloured hairs on the limbs and other parts of the body occasionally become developed into "thick-set, long, and rather coarse dark hairs," when abnormally nourished near old-standing inflamed surfaces. (Please turn page)



"DARWIN'S POINT"

This vestigial tip sometimes appears as a reminder of an earlier form of the human ear.

I am informed by Mr. Paget that persons belonging to the same family often have a few hairs in their eyebrows much longer than the others; so that this slight peculiarity seems to be inherited. These hairs apparently represent the vibrissae, which are used as organs of touch by many of the lower animals. In a young chimpanzee I observed that a few upright, rather long, hairs, projected above the eyes, where the true eyebrows, if present, would have stood.

The fine wool-like hair, or so-called lanugo, with which the human foetus during the sixth month is thickly covered, offers a more curious case. It is first developed, during the fifth month, on the eyebrows and face, and especially round the mouth, where it is much longer than on the head. A moustache of this kind was observed by Eschricht on a female foetus; but this is not so surprising a circumstance as it may at first appear, for the two sexes generally resemble each other in all external characters during an early period of growth. The direction and arrangement of the hairs on all parts of the foetal body are the same as in the adult, but are subject to much variability. The whole surface, including even the forehead and ears, is thus thickly clothed; but it is a significant fact that the palms of the hands and the soles of the feet are quite naked, like the interior surfaces of all four extremities in most of the lower animals. As this can hardly be an accidental coincidence, we must consider the woolly covering of the foetus to be the rudimental representative of the first permanent coat of hair in those mammals which are born hairy. This representation is much more complete, in accordance with the usual law of embryological development, than that afforded by the straggling hairs on the body of the adult.

Science News Letter, August 8, 1931

Fear and Flight

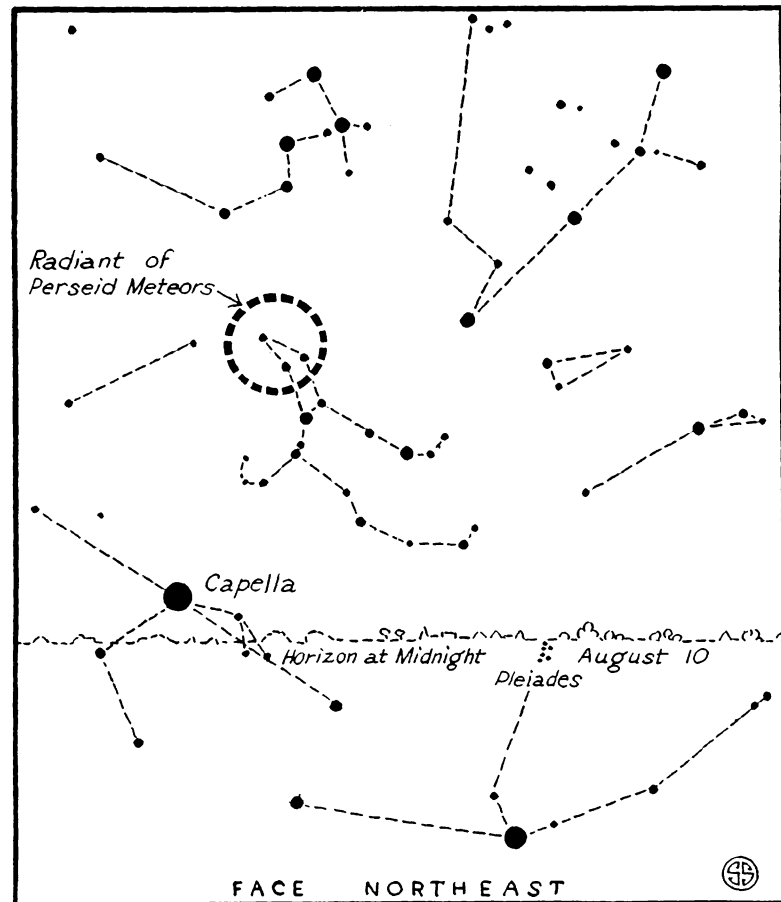
were the horses drawing the chariot of Mars, god of war, moving across the heavens.

The Moons of Mars

were named for those dashing steeds: Phobos and Deimos, who swept to battle.

Asaph Hall

describes their discovery in the next "CLASSIC OF SCIENCE"



USE THIS MAP TO GO METEOR HUNTING

If you do so on the dark nights of August 11 and 12 you will achieve best results by getting out in the country away from city lights. First find the constellation Perseus, the apparent center of meteor radiation. You can do so by spotting the star, Capella, one of the brightest in the northeastern heavens. The larger the dots representing stars on this map, the brighter the stars.

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Five first magnitude stars decorate the August evening sky. In the west is Arcturus, in Bootes, the bear driver. Antares, in Scorpius, the scorpion, shines with its red light in the southwest. Almost overhead is Vega, in Lyra, the lyre. Below it, to the southeast, is Altair, in Aquila, the eagle; and, to the

east, Deneb, at the top of the northern cross, or Cygnus, the swan. The moon, as was mentioned before, is new on the thirteenth. Last quarter is on the sixth, and first quarter on the twentieth. Full moon occurs on the twenty-seventh. There will be moonlight evenings, therefore, during the fortnight beginning about the fifteenth.

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ENGINEERING

Novel Apparatus Enables Trade-Marking of Coal

HOUSEWIVES will be able to choose their favorite brand of kitchen coal just as they do articles at the delicatessen if the trade-marking precedent reported in the *Coal Age* is followed. In order to standardize its product and protect the consumer, a Virginia coal company is giving each lump of coal a distinctive marking.

With the new trade-marking apparatus, the coal from the mine is passed along a trough conveyor and comes in contact with metal arms placed perpendicularly across the width of the conveyor. At the end of each arm is a curved metal piece or shoe which rides over the lump of coal. As long as the shoe is in contact with the coal lump the valve to an attached pressure gun is open and the lump receives a neat band of bright paint.

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