

from almost full-term foetuses, as described by Ellis⁴.

Observations on the normal bacterial flora of wool roots during sweating have shown that *Proteus vulgaris* (No. 7) is probably the principal sweating bacterium, for although it occurs in relatively small numbers on the wool at the beginning of sweating, it is present in almost pure culture on the wool roots when wool loosening is complete. Sometimes the unidentified species of *Achromobacter* (No. 42) is also present at the completion of sweating, but then usually in equal numbers with No. 7. The flavobacteria occur rarely on wool roots during natural sweating.

Proteus vulgaris (No. 7) may be identical with *Bacillus ptiline* isolated from sheepskins by Villon⁵, and with the *Streptococcus* of Schmitz-Dumont⁶, since its morphology varies under certain conditions. Similarly the bacilli "d" and "e" described by Wood⁷, and "No. 1" and "No. 6" described by Chambard and Azémar², may be identical with No. 7 and No. 42 respectively isolated from Australian sheepskins. Owing to the incomplete descriptions, they cannot be identified with certainty.

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¹ To be described in detail in *Bull. Coun. Sci. Ind. Res.* (Aust.).

² Chambard, P., and Azémar, J., *J. Int. Soc. Leath. Trades Chem.*, **16**, 27 (1932).

³ Bergey, D. H., "Manual of Determinative Bacteriology" (Baillière, Tindall and Cox, London, 1939).

⁴ Ellis, W. J., *J. Coun. Sci. Ind. Res.* (Aust.), **18**, 173 (1943).

⁵ Villon (1894), cited by Chambard and Azémar (see ref. 2).

⁶ Schmitz-Dumont (1897), cited by Chambard and Azémar (see ref. 2).

⁷ Wood, J. T., *J. Soc. Chem. Ind.*, **18**, 990 (1899).

Display and Bower-building in Bower Birds

THE recent note on this subject by Marshall¹ is of considerable interest in directing attention to the life-history of a remarkable group of birds. Of particular significance is the apparent correlation between the colours of the objects used by the male for decorating the bower and the more conspicuous colours of the female. If this correlation exists, it can have obvious epigamic value. Marshall studied especially the satin bower bird (*Ptilinorhynchus violaceus* (Viellot)), which prefers blue and green-yellow objects for decoration, and these colours can admittedly be correlated with the blue eyes of the female and the green-yellow of her plumage. But the spotted bower bird, a speckled brown bird with a bright mauve-red neck-tuft, shows preference for green and white objects, the white objects often consisting of bleached bones. Sometimes, with this species, green berries which have been placed in the bower turn red or yellow and are then promptly rejected. Yet another species, Newton's bower bird, with brown and yellow plumage, collects white flowers only. From the facts so far known, therefore, the correlation between choice of colours and plumage does not apparently extend to other Australian bower birds.

The oil-droplets in the cones of the avian retina

form inter-ocular filters the colours of which vary with the colour and proportion of the oily constituents, and hence there is reason for believing that the spectral sensitivity of birds will vary from species to species. In other words, we are led by physiological reasoning to suspect specificity in relation to colour-awareness in birds, and from this it is a temptation to assume that such specificity must necessarily bear a relation to the plumage colours of the species. So far, however, few convincing experimental findings have been produced to support this view, and the bower birds, representing as they do a *natural* experiment, will amply repay further close and accurate study, the results of which will far outweigh in value any artificial studies on domestic types like the hen and pig.

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¹ *Nature*, **153**, 685 (1944).

'Soil' Mechanics

HAVING read with interest the correspondence in recent issues of *Nature* on the suitability of the expression 'soil' mechanics, I am moved to express the hope that the writers will be more successful than I have been in securing the adoption of a better term.

I remember that the use of the expression 'soil' mechanics dates from an earlier time than that of the First International Congress at Harvard in 1935 (as stated by one correspondent) and that I then made strong representations to friends in the United States about its misleading nature. In reply, I was told that it was already too late to effect a change. Then came the Congress, which served to make the term more widely known and established. Thus it appears that, because somebody had mistranslated Terzaghi's original German expression, we were to be condemned for all time to suffer an inevitable muddle in nomenclature.

When, in 1940, I served as the geological member of the appropriate panel of the Committee on Earth Pressures of the Institution of Civil Engineers, I again protested vigorously against this use, or misuse, of the word 'soil', and suggested in its place 'earth', if the alternative and more precise expression 'unconsolidated rocks' (not 'unconsolidated deposits', which is too restricted in scope) were adjudged too cumbersome. But once more I failed, for 'soil' mechanics was said to be too firmly rooted in engineering literature to be eradicated.

Although we are not warranted in any circumstances in defending the slipshod use of words, the trouble in the present instance lies deeper than the simple question of nomenclature. In my experience, the result of the adoption of the expression 'soil' mechanics is that engineers and chemists who have occasion to consult the literature of 'soils' in this connexion are directed (by way of librarians or bibliographies) to pedological literature and not to the appropriate geological sources of information on unconsolidated rocks—sometimes with unfortunate results.

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