

of the foot is purple, with a longitudinal orange stripe. The orange pigment is evidently the same as that of the other species, but the purple is different from the blue and does not dissolve out in formalin.

No doubt all these pigments represent "warning coloration."

T. D. A. COCKERELL.

East Las Vegas, N.M., U.S.A., November 10.

The Ash Constituents of Some Lakeland Leaves.

A FURTHER series of experiments bearing on the question indicated in this journal (vol. lxiii., No. 1634, p. 396) was undertaken during the summer and autumn of this year. It was deemed advisable to extend the research over a pretty wide range of subjects, so as to be able, if possible, to catch some kind of clue towards the correct elucidation of the causes operative in the case. The capital object in view was to ascertain the exact amount of inorganic constituents (especially silica and lime) which the leaves extract from the soil at different periods of their life, so as to determine whether this particular amount has any connection with the chemical composition, &c., of that particular soil. In all cases the entire leaf and petiole were used dried at 100° and then incinerated, the same vessel and the same source of heat being used for each separate incineration.

Leaves of	Date.	Percentage of crude ash.	Percentage of silica (SiO ₂) and of lime (CaO) in the crude ash.	
			SiO ₂	CaO
Beech	May 17	4·8		
"	July 30	5	17	27·4
" (brown)	Nov. 3	6·8	27·2	23·7
Oak	Aug. 17	5·8	12·2	29
" (brown)	Nov. 3	6·8	14·5	37·5
Hazel	June 10	3·3		
"	Aug. 4	5·7	6·2	26·8
" (orange)	Oct. 27	6·3	15	28·6
Alder	July 29	4·9	1·8	31
" (falling)	Nov. 1	5·7	1·7	33·6
Linden	May 30	5·5		
" (yellow and brown)	Oct. 18	10·8	2·5	34·8
Ash	June 12	7·7		
"	Aug. 2	6·7	1·5	37·7
" (yellow)	Oct. 27	9·5	5·3	34·3
Elder	May 21	8·7		
" (yellow)	Oct. 24	8·5	9·5	31·5
Scots pine (old leaves)	Aug. 19	2·5	9·4	15·9

On reviewing the foregoing table there would seem at first sight to be nothing remarkable therein; but a little collation and comparison serve to throw a more searching light upon the subject. All these trees and shrubs have sprung from a siliceous gravelly soil charged with basic constituents, but rather poor in lime (well under 12 per cent.). Nevertheless, the leaves of ash, alder and oak have managed to secure an amount of lime which may be regarded as nearly, if not quite, their full complement of that substance. The high proportion of lime in alder leaves may be referred to the very low proportion of silica; but this is hardly feasible in the case of the ash and oak. The ash-leaf, with a feeble proportion of silica, maintains a considerable quantity of potass and an amount of lime necessary to neutralise the organic acids which it produces in very notable degree. The oak-leaf, with far less potass in autumn, demands for the annulment of its organic acids (chiefly oxalic) a supply of lime apparently commensurate with its unique faculty for the production of starch. It will be specially observed that while, as indicated by the similar ratio of ash, the leaves of beech and oak have reached on November 3 a coequal measure of decay, that of the beech is evidently farther fallen. The leaves were selected for the experiment from beech trees flourishing right vigorously on the sandy shelving banks of the bays which indent

the upper reach of Ullswater. The result was so remarkable that the experiment was repeated with every care and precaution, but the amount of silica remained as imperturbably high as before. The tree is a decisive alien in Lakeland and its seeds never ripen here, but in a sheltered situation on a sandy bottom it presents an aspect of unquestionable health and sturdy adaptation to the circumstances. P. Q. KEEGAN.

Patterdale, Westmorland.

Note on a Point of Chemical Nomenclature.

THE use made by Mr. Goodwin and myself, in a recent communication to the Chemical Society, of the term *alphyl* is the occasion of an interesting letter from "A. T. de M.," published in NATURE (October 31, p. 648). The history of the term *alphyl* and its replacement by Prof. Vorländer's term *aryyl*, or, better, *aryl*, the form in which it has been generally adopted, is correctly stated. In the interest of so important a matter as uniformity in chemical nomenclature I willingly agree with "A. T. de M.," and will adopt *aryl* instead of *alphyl* for monovalent aromatic hydrocarbon radicals (C₆H₅, C₆H₄CH₃, &c.).

But Prof. Vorländer goes further than this, and his view is advocated by "A. T. de M." He proposes to alter the well-understood meaning of the term *alkyl*, to retain the term *alphyl* with a new meaning and to introduce the combination *alpharyl*. These proposals seem to me not only confusing, but unnecessary. Let us retain *alkyl* in its old meaning, adopt *aryl* for monovalent aromatic hydrocarbon radicals and use *acyl* for all monovalent acid radicals. The terms *alkylene*, *arylene* and *acylene* might be adopted for the corresponding divalent radicals without introducing a new termination. For the radical benzyl and its homologues, if it be thought desirable, *ar-alkyl* could be employed.

ALFRED SENIER.

Queen's College, Galway, November 17.

Does Man use his Arms in Locomotion?

IN "Monkeys; Their Affinities and Distribution," by Dr. A. R. Wallace (reprinted in his "Studies; Scientific and Social," vol. i.), the author gives (p. 183) as one of the characters in which man differs from all the monkey tribe—"the perfect freedom of the hands from all part in locomotion."

My object in writing is to point out the peculiar way in which the majority of people move their arms and hands when walking or running. One may safely say that everybody, adults and children, at one time or another exercise this movement. The natural way in which children run is to "paddle" with the arms and hands, though trained runners do not do so.

Now is it not possible that this muscular movement of the fore-limbs in opposite directions in the act of locomotion is a survival of the four-legged mode of progression of man's remote ancestors? The anthropoid apes, we know, get about by the aid of their arms and hands; while the baboons walk much in the same way as dogs do. The examples and illustrations could be enlarged upon indefinitely, and it is not for me to do so. I believe that this theory has been thought of before, but I am unable to find any trace of it in the books I have consulted. I should be very grateful if any of your readers would enlighten me on the subject.

BASIL W. MARTIN.

Elm House, Hampstead.

CELEBRATION OF THE JUBILEE OF M. BERTHELOT.

THE Berthelot jubilee, celebrating the fiftieth anniversary of the publication of Marcellin Berthelot's first scientific work, was held in the Great Hall of the Sorbonne, in the University of Paris, on Sunday, November 24. The President of the Republic, M. Loubet, was in the chair, surrounded by the Ministers of the Cabinet, the Ambassadors of the various countries in the French capital, and numerous delegates from foreign and from local scientific societies.

The hall, a large amphitheatre, capable of seating more than 3000 persons, was packed with those who delighted to do honour to M. Berthelot. Behind the daïs, in the