

thermal oscillation, or adsorption, or many other causes, it may in addition exert an impulse on the molecule in the direction *ob*, receiving the equal and opposite impulse along *oa*, or it may exert an impulse along *oa*, receiving one along *ob*. Should the former lateral effect predominate, the directing effect of the cone will be *increased*; should the latter predominate the effect will be reduced, but there is no reason to suppose that, in any representative period of time, either will predominate over the other.

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January 1.

#### Sir Isaac Bayley Balfour.

ALL botanists and lovers of flowers will mourn the death of the Edinburgh professor, who served science and horticulture as few men have ever done. The occasion seems opportune to relate an incident comparatively unimportant in itself but in a manner typical. Many years ago a beautiful *Primula*, called by Greene *P. rusbyi*, was discovered in the Mogollon Mountains of New Mexico. Later, in the Sandia Mountains of the same State, one of my students found an apparently distinct species, which I named *P. ellisia*. These primroses occupied distinct and isolated mountain ranges, but were so similar, at least in the herbarium, that a German writer pronounced them identical. No one, so far as could be learned, had seen more than one of them alive, and it was the living plants we needed to settle the matter. I was able to procure seeds of *P. ellisia* for Prof. Bayley Balfour, and in 1921, when my wife and I visited him in Edinburgh, he not only had *ellisia* in full flower, but also *rusbyi*, the seeds of which he had secured from some other collector. It was a dramatic moment when the Professor held the two pots, one in each hand, and pointed out that the plants were quite distinct. Thus, in Edinburgh, we learned a lesson in New Mexico botany, which we had never been able to learn when resident for years in that region. No doubt others could relate parallel experiences.

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#### Age and Area in Natural Selection.

THE account in NATURE (December 2, vol. 110, p. 751) of the discussion at Hull on "The Present Position of Darwinism" has interested me greatly. Of course I realise that such an account must be summary and omit much that is said, but I am struck by the fact that apparently none of the speakers mentioned what seem to me two fundamental and even fatal objections to the Age and Area hypothesis as a subject for the theory of Natural Selection.

In the first place, the fact that "genus" is a very inexact term, largely dependent on the "personal equation," seems to be completely overlooked. Some of us tend to large genera, some to small. In his article in the *Nineteenth Century*, Dr. Willis refers to a genus of more than 1500 species. In my opinion, to call such a group a genus is positively grotesque; it includes probably scores of what I would call genera. I can juggle the genera of echinoderms (my own special group) so as to lend apparent support to the Age and Area hypothesis, or I can re-define them so as to contradict it strongly, and in either case I can quote high authorities or give excellent reasons for my course.

In the second place, the Age and Area hypothesis really explains nothing. It merely restates in a more or less tabular way what every taxonomist, who has

given any attention to distribution, knows is often the case. I say "often" because, as some of those who took part in the discussion at Hull pointed out, there are many cases of distribution which do not fall in with this tabulated arrangement. No *causal* connexion between age and area is brought out in the proposed hypothesis. The only causal factors suggested are time and an inherent tendency to diversification, and surely both of these are given abundant play in the theory of Natural Selection.

I note with interest, perhaps I might say amusement, the statement by Mr. Cunningham that Natural Selection is "as extinct as the dodo." It may be in the land of its birth, but it is still very much in evidence in America. Nearly every systematic zoologist whom I know personally believes in it as a factor in evolution, though the importance attributed to it may vary greatly. Prof. E. G. Conklin of Princeton, certainly one of our foremost zoological thinkers, has just completed a course of Lowell Institute lectures in Boston on "The Revolt against Darwinism," in which he has most clearly and emphatically stated his strong conviction, not only that such revolt is unjustifiable, but that Natural Selection is the most important theory that has yet been proposed for helping us to understand adaptation. It surely seems a little rash to call Natural Selection, or anything else, "extinct" because it has disappeared from one's own horizon. Horizons contract with increasing near-sightedness.

HUBERT LYMAN CLARK.

Cambridge, Mass., U.S.A.,  
December 22, 1922.

#### The Cause of Anticyclones.

MAY I be allowed to suggest that the region of an anticyclone finds its most likely interpretation as an area hemmed in by cyclone systems. I agree with Mr. Dines (NATURE, December 23, vol. 110, p. 845) that it is the mass of air over the area that is important. It is a matter of personal observation that, as Mr. Dines says, "the steady and persistently high barometric pressure that has prevailed over southern England during most of the autumn" has been associated with the overlapping high overhead *here* of the margins of cyclone systems that were simultaneously from west to eastwards on our north and on our south respectively. The phenomenon of contrary currents at *high* elevation is an inseparable feature, in my experience, of anticyclonic conditions.

May it not be a conditional factor of these anticyclonic high pressure areas (?) the "mass" of air being piled to excess and held *in situ* by the conflicting winds of over-reaching cyclone lips. The play of antagonistic forces of movement and of their accompanying contrasts of humidity and temperature may be answerable for all other anomalies of anticyclone areas. What are wanted are observations of winds of *highest* elevation, which are only to be obtained by the method of employing a projected telescopic image of the sun, which renders visible and legible the "wind-billows" of individual strata of movement.

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#### The Name of the Pond Snail.

IN NATURE for January 13, p. 49, two writers of authority call this snail *Limnæa peregra*. The word "peregra" is not Latin—a fact which at one time had penetrated to the consciousness of most conchologists and malacologists but appears to have been again forgotten.

F. A. B.