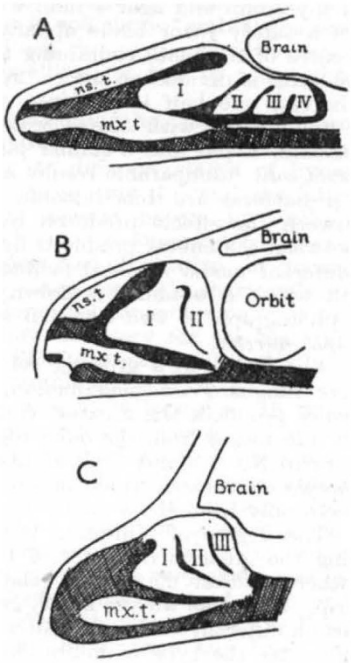

reappeared in certain recent forms. Arber[5], quite independently of Dollo, formulated from botanical evidence a 'law of loss', the "general rule that a structure or organ once lost in the course of phylogeny can never be regained; if the organism subsequently has occasion to replace it, it cannot be reproduced, but must be constructed afresh in some different mode", and later collected such data as had been submitted from time to time as evidence contrary to Dollo's law. Such evidence included the re-acquisition of a lost toe in a laboratory race of cavy, the re-development of lateral digits in some horses, the occasional presence of a fifth stamen in anomalous Iris specimens. Arber pointed out that these were all cases of meristic variation and that Dollo's law did not apply to them.

The present instance of the nasal turbinals is also meristic in nature, but is derived from normal anatomy and not from teratology: it is bound up with the fundamentals of Primate evolution.

The ambiguity of Dollo's law depends upon the interpretation of the words 'structure' or 'organ'. Presumably if the entire Primate ethmo-turbinal series had been phylogenetically lost, no single turbinal could ever have been regained: but so long as even one member of the series persisted in primitive Primate forms, the redevelopment in descendant recent forms of the full turbinal complement remained a possibility. It seems advisable, therefore, to add to the law a rider to the effect that, in the case of structures constituting a series, the law applies to the series as a whole, and not to the individual members thereof.

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[1] Cave, A. J. E., and Haines, R. W., *J. Anat.*, **74**, 493 (1940).
[2] Schaeffer, J. P., *J. Morph.*, **21**, 613 (1910).
[3] Paulli, S., *Morph. Jb.*, **28**, 483 (1900).
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Failure of *Iso*-Immunization to *M* and *N* Agglutinogens in Man

SINCE the *A*, *B* and *Rh* agglutinogens so frequently invoke an immune response, either between mother and baby or as the result of incompatible blood transfusions, speculation has arisen to explain why differences in *M* and *N* type of donor and recipient, or of baby and mother, do not have the same effect.

The *M* and *N* agglutinogens are good antigens in animals; but the work of Kosjakov and Tribulev[1] may provide an explanation for the absence of any regular response to the *M* and *N* antigens in man. In an attempt to demonstrate the presence of these substances in the body tissues by means of the inhibition of the corresponding anti-serum, Kosjakov and Tribulev found that non-specific inhibition was so marked that the result was always such as to suggest that both *M* and *N* were present in the tissue under investigation. They discovered, however, that if, for example, the tissue thought to contain the *M*-group substance was first saturated with an anti-*N* serum it was then capable of specifically inhibiting an anti-*M* serum. Similarly, before specific absorption by *N*-group substance could be demonstrated it had first to be saturated with anti-*M* agglutinins.

This suggests that anti-*M* or anti-*N* agglutinins will only rarely appear in the serum of a mother who is carrying a baby of dissimilar *M* or *N* type, or following a blood transfusion, because of the marked non-specific absorptive capacity of human tissues for these *iso*-agglutinins.

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[1] *J. Immunol.*, **37**, 283 (1939).

Lichen Substances Containing Nitrogen

IT is a matter of interest that, notwithstanding the very large number of substances that have been isolated from lichens, there is only one recorded example of a material containing nitrogen, namely, picroroccellin, isolated by Stenhouse and Groves in 1877 from a variety of *Roccella fuciformis*, and to which they attribute the formula $C_{27}H_{29}O_5N_3$.

From the lichen *Lecanora epanora* we have isolated two yellow nitrogen-containing constituents, rhizocarpic acid and epanorin. Rhizocarpic acid, which is found in many lichens, has hitherto been regarded as consisting solely of carbon, hydrogen and oxygen; we find that it has the formula $C_{28}H_{23}O_6N$ and that, on hydrolysis with strong alkali, it breaks down into methyl alcohol, oxalic acid, phenyl acetic acid and a colourless acid of formula $C_{17}H_{17}O_3N$. Our analytical data for epanorin which, like rhizocarpic acid, contains one methoxyl group, accord best with the formula $C_{21}H_{21}O_5N$; on alkaline hydrolysis it gives rise to methyl alcohol, oxalic acid, phenyl acetic acid and a colourless acid of formula $C_{14}H_{19}O_3N$. The products of hydrolysis indicate $C_{25}H_{25}O_6N$ as an alternative formula for epanorin.

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