

which is a deeply impressed concave vein (Cu_2) separating the anal area or clavus from the rest of the wing (Fig. 1). When the wedge-shaped clavus has become separated, the remainder of the wing appears to be very narrow at the base, and this would suggest a resemblance to dipterous wings, though the thick and strongly arched costa is quite unlike that of any Diptera.

Another point of resemblance between the two, which evidently deceived the author, is the frequent presence of a closed median cell (discal or discoidal cell, mc); but such a cell is found in many orders. All primitive Diptera have the radial sector with four or three branches, and all Diptera, without exception, like their allies the Mecoptera, have the first cubitus unbranched. The Rhætic wings have a simple radial sector and a forked first cubitus, and in these and all other characters agree with the Upper Triassic Scytinopteridæ.

The problem of the ancestry of the Diptera is one of the greatest interest, and it is important that no inaccurate determinations of fossil wings should confuse our view of it. The oldest known fossil Diptera at present are those from the Upper Lias of Europe.

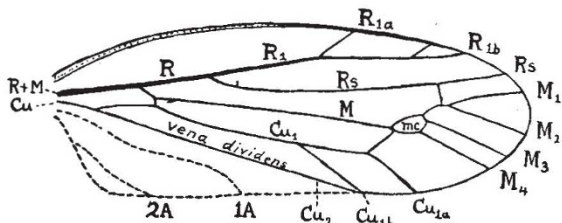


FIG. 1.—*Tipuloidea rhatica* (Tillyard) Wieland. Wing, with missing clavus restored by broken lines.

No Diptera are yet known from the Lower Lias. In the Upper Triassic beds of Ipswich, Queensland, the age of which is either Rhætic or a little older, the Diptera are replaced by their ancestral order Paratrachoptera, which had four wings and a venational scheme very much like that of the caddis-flies or Trichoptera, but with a simple instead of a forked first cubitus. I do not assert that true Diptera might not have existed in the Rhætic of South America, but it is certainly highly improbable, especially as the fossil record shows that Australia was ahead of the rest of the world in specialised insect types in the Upper Permian, and probably also in the Upper Trias. In any case, neither of Dr. Wieland's new genera is dipterous.

The generic name *Tipuloidea* given by Dr. Wieland to the larger and better preserved of his two fossils is an unfortunate one. There is already a genus of Tertiary fossils, *Tipulidea*, Scudder, and the word "*Tipuloidea*" has been used for years to indicate the super-family containing the *Tipulidæ* and their allies. Apparently if I choose to name a new genus Lepidoptera or Odonata or Blattoidea there is nothing to prevent me except my own sense of the fitness of things. Surely all names already in use for higher groups should be "taboo" for genera? Assuming that *Tipuloidea*, Wieland, is preoccupied by *Tipuloidea*, super-family name, I would suggest that the generic name of Dr. Wieland's new fossil be changed to *Wielandia*, in honour of its discoverer.

The accompanying illustration (Fig. 1) shows the fossil *Tipuloidea rhatica* with the missing clavus indicated by broken lines.

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September 5.

Root-cap Development in *Calluna vulgaris*.

ONE of the characteristic differences between root-apex and stem-apex in a plant is that the meristem of the former produces a tissue in front of the apex known as the root-cap. In my experience this root-cap remains small even in roots

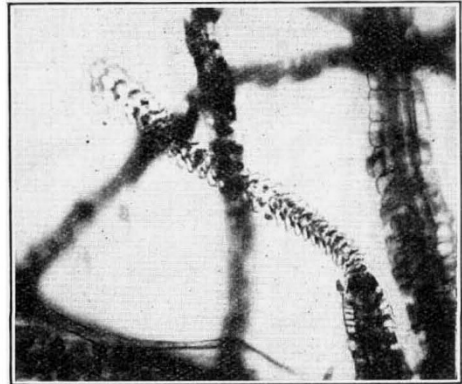


FIG. 1.—Root-cap development in *Calluna vulgaris*.

growing in water, owing to the disintegration of cells on the outside.

It is thought that the accompanying photograph (Fig. 1) of a root of *Calluna vulgaris*, grown for some months under controlled conditions as described in a recent paper (Rayner, *Brit. Journ. Exper. Biol.* vol. 2, 1925, p. 265) and showing the development of a root-cap of considerable length, may be of interest to botanists owing to its unusual character.

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Rabbits in Africa.

THE common rabbit, I understand, is not indigenous to that part of Africa forming the Ethiopian zoological region, although it occurs in the Palæartic part of the continent bordering on the Mediterranean.

It is interesting, therefore, to note the occurrence of a well-established colony at Masindi, which has been there for so long that its origin is unknown to the natives, who give the rabbits the same name as the indigenous hare. For a long while I thought they might be feral descendants of some domesticated rabbits at the missions in the neighbourhood, but a book which I have just been reading furnishes a clue. It is "*Emin Pasha in Central Africa*," published in 1888 by Messrs. George Philip and Son, and contains a collection of that great traveller's letters and extracts from his journals. In a small section headed "*The acclimatisation of various domestic animals in the equatorial Nile region*" Emin writes from Lado, December 25, 1881: "I have introduced rabbits which are doing well and promise to thrive." The actual locality into which the rabbits were introduced is not stated, but Masindi was included in Emin's travels, and possibly this statement may explain the occurrence of rabbits there. Lado is on the White Nile at about 5° north latitude; Masindi lies east of Lake Albert a little south of 2° north latitude. It is of considerable interest that rabbits should have been able to establish themselves firmly in a country abounding with carnivora, birds of prey, and snakes, not to mention native Africans!

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Masindi, Bunyoro, Uganda Protectorate,
September 23.