the foxtail pine from Creede appears to have no characters separating it from the living tree. In such cases it appears premature to offer a new specific name, though an argument can be made, that in all probability the plants are not identical, and only appear so owing to the lack of adequate fossil materials. Perhaps the most reasonable compromise would be to use trinomials; in the cases referred to, *Pinus aristata crossii* and *Acer negundo negundoides*. This system at any rate enables us to avoid committing ourselves to the doctrine that the plants are positively, and in all respects, identical.

From a general biological point of view, it is relatively immaterial whether the Creede fossil pine is exactly the same as the modern one. The significant thing is, that it is substantially the same, and that this type of pine has existed in these western mountains of the United States from the Miocene down to the present day. In all this time, like the snail-genus *Oreohelix*, it seems to have occupied the same general area, the higher elevations of our south-west country. It has not spread into Mexico, British America, or the eastern United States. It is an isolated type, but a Californian species, *P. balfouriana*, may be regarded as an offshoot from it.

It seems probable that the Creede flora may be essentially contemporaneous with that of Florissant, though very different in most of its species. Creede is to-day at a considerably higher elevation than Florissant, and presumably was so in Miocene times. If two floras of the same age, but from different elevations, are preserved in a now temperate region, the one from the higher elevation may be expected to resemble most that now living in the same district, and hence may be regarded as more modern. Very few high altitude Tertiary floras have been preserved, so that at Creede assumes more than ordinary importance.

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Dec. 29, 1933.

[1] Carnegie Inst. Publ., 416.

Heredity of Aniridia

A VERY remarkable pedigree of aniridia was published in 1915 by an American ophthalmologist, Samuel Risley. It was undoubtedly issued in good faith by a man, now dead, who accepted, without verification, the statement of a hospital patient who suffered from the defect. This almost blind man, aged 27, described the occurrence of a total absence of iris in 111 of his 119 relations in four generations; he gave, moreover, the age, or age at death, and the Christian name of most of these 119 relations; his statement was confirmed, from hospital notes, in the case of one individual only.

Now this pedigree is such as to arouse instant mistrust on the part of a geneticist. A few years ago, I took some considerable pains to get in touch with the family to obtain support for the facts. These efforts met with no success, and I was ultimately advised by the late Dr. Lucien Howe, a former president of the American Ophthalmological Society, who had also inquired into the matter, that the history was entirely untrustworthy and should be suppressed.

Risley could never have considered the facts presented to him by his 'junior house surgeon', for he even includes the statement concerning one case of *bilateral* aniridia, that the woman had one blue eye and one black eye.

Unfortunately, the history has been repeatedly reproduced in America and in Great Britain; recently it has been made use of for propaganda purposes[1]. It was even presented to the Prevention of Blindness Committee by a witness who was called, as an expert, to advise on the prevention of blindness due to hereditary causes.

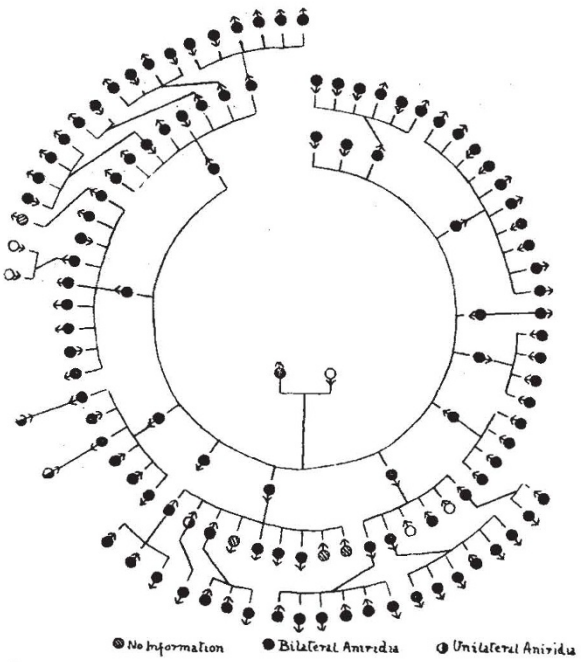

FIG. 1.

A warning regarding the pedigree in the "Nettleship Memorial Volume" has been, apparently, ineffective. I therefore append a copy of the pedigree (Fig. 1) and hope my warning will be supported by the publication of this letter in NATURE.

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March 1.

[1] *Eug. Rev.*, **24**, p. 121, and *Brit. Med. J.*, Jan. 1934, p. 96.

Thermal History of the Earth

PROF. ARTHUR HOLMES has written to me to point out that I have misunderstood his meaning in his recent paper on the above subject[1]. In this paper he states (p. 187 and Fig. 9, p. 179) that the condition for permanent convection currents to be possible in the earth's crust below a certain depth is that the adiabatic and freezing point gradients of the fluid substratum should become tangential at that depth. I assumed that he meant that, if the actual numerical values of the two gradients at various depths were plotted against the depth, the two resulting curves would touch at the critical depth, and that consequently if the freezing point gradient were greater above this depth it would also be greater again below it.

What Prof. Holmes actually intended was, that if