actually it is only 4,600. There are few places on a Mercator map that are as badly off as that.

A large part of the book is given over to a discussion of the war and its strategy. Herr Doktor Renner, who likes to refer to our general staff as composed of "admirals, generals and similar elderly people" assures us that these people suffer not from being blind but merely from hindsight, whereas it is intimated that the author combines the foresight of Columbus, Major General Haushofer and General Billy Mitchell. Mr. Renner speaks feelingly about illiteracy when referring to people who do not agree with him, and about "Tragic maps," *i.e.*, all maps that do not have the north pole at the center. The only statement that I can heartily agree with is his: "The ideas of uninformed people do not have much shape or dimension." Certainly the ideas of the uninformed amateurs of Teachers College are sometimes badly misshapen.

The authors of these three books have made a great discovery: the earth is round. So now they want to share this discovery with the rest of us who are merely illiterate believers in the tragic Mercator maps, and who possess only hindsight, if any. And all this has to be done with the magic word "global." The real tragedy lies in that these books come dressed up with copious references to the Civil Aeronautics Administration which will be mistaken by many still less-informed people as indication of approval by the C.A.A. There probably are few fields of education where the need for good, simple, but correct texts is as great as it is in aviation—in all of its aspects. If books such as these, containing a vast amount of misinformation, should be adopted in many schools, they could warp the thinking of countless students, and do untold harm to the future of aviation.

WILLEM J. LUYTEN

UNIVERSITY OF MINNESOTA

SOMATIC MUTATIONS IN THE APPLE

SOMATIC mutations in apple varieties resulting in a change in the distribution pattern of the color in the epidermal cells of the fruit are quite common. Certain of these mutations are of increasing importance in nurseries and orchards. Most of these differ only in fruit color pattern and can not be identified by tree characters. Van Buren, which is reported to be a somatic mutation of the Duchess of Oldenburg variety, is an exception. It differs in many characters from its supposed somatic parent.

The McIntosh variety has produced many color mutations. Color patterns vary from distinctly striped to uniformly red with no trace of stripes or splashes. The type almost always comes true in asexual propagation. The striped form is generally regarded as the original, but there is evidence that the original McIntosh tree bore apples that were of a uniform red.

There are under propagation at the Massachusetts Experiment Station a considerable number of reputed mutations of the McIntosh apple. Two of them have been in nursery propagation for several years and produce apples that are of a uniform red and very similar if not identical in all fruit characters. They can not be distinguished by vegetative characters. Budded on most stocks, they behave alike, though one type known as Type G is sometimes a little slower than the type called R in starting growth from the inserted bud.

These two types were budded in 1941 on a clonal stock known as Spy 227. Both started growth normally in 1942, but by midsummer all the budlings of Type R were dead or dying, while those of Type G grew normally all summer. The varieties Stayman and Winesap, both on this stock, behaved much like Type R, Stayman budlings dying even earlier than Type R, while Winesap lived a little longer. It is remarkable that these two types, very similar and probably indistinguishable in all external characters, show such a striking difference in behavior when budded on this particular stock. The test is being repeated, including several additional types of McIntosh and varieties more or less related to the Winesap and Stayman.

J. K. SHAW

L. SOUTHWICK

MASSACHUSETTS STATE COLLEGE

FRANZ BOAS, HIS PREDECESSORS AND HIS CONTEMPORARIES

IN her appreciation of Franz Boas (SCIENCE, 97: 2507, 60–62, 1943) Professor Benedict properly stresses the progressive shift in his anthropological interests and his unusual capacity for formulating problems so as to bring them nearer solution. However, two points in her article require further elucidation: one of them concerns Ratzel; the other, Boas's relations to predecessors and coevals.

So far as I can discover, Ratzel lectured at Munich and Leipzig, whereas Boas studied at Heidelberg, Bonn and Kiel. It is thus not clear how Ratzel can be called "his teacher." Incidentally, Ratzel was not nearly so intransigent an environmentalist as is commonly supposed.

Far more important is the second issue. We read: "He [Boas] found anthropology a collection of wild guesses and a happy hunting ground for the romantic lover of primitive things; he left it a discipline in which theories could be tested and in which he had delimited possibilities from impossibilities." Professor Benedict is of course entitled to her own reading of history. But unfortunately her statement might be mistaken for the general sentiment of a Boas