dant, accessible, usable fauna and flora; (2) accessibility of station; (3) climate—on a basis of working efficiency during *entire* year; (4) economy in operation.

Organized research in the tropics for a definite purpose is admirable. All honor to Mayor for the splendid work he so indefatigably directed; but let us not take too easily for granted hasty generalizations concerning the superiority of the tropics or subtropics as a situation for a *permanent* marine biological laboratory. There is a glamour about the tropics which is too frequently dissipated on close acquaintance.

W. K. FISHER

HOPKINS MARINE STATION

THE MOVEMENT OF THE CENTRAL ATLANTIC RIDGE

THE soundings in the Central Atlantic area show the existence of a long ridge, which passes through the Azores and the islands of St. Paul and Tristan da Cunha. This ridge shows a bending-point in the neighborhood of the equator between the island of St. Paul and the Romanche deep.

We have pointed out in some recent publications that many of the transverse fractures which often are found near the bending-points of moving geanticlines are the surface expression of differences in rate of horizontal movement. In moving rows of islands several deep straits between the islands coincide with bending-points.

Transverse faults with a horizontal displacement are sometimes visible and where the epicenters of modern earthquakes are on transverse tectonic lines near the bending-point, similar movements are still going on at the present day.

In regions which are not accessible for direct observation, the comparative tectonic method should be applied. If a submarine ridge has a bending-point, the form of the ridge can be the result of differences in rate of movement of neighboring points in the horizontal projection of the ridge. Where the differences are greatest, epicenters of earthquakes will be numerous and if a submarine ridge shows a maximum of seismicity in the neighborhood of a bending-point, this points to movements with unequal velocity in a horizontal direction. The central Atlantic ridge shows a bending-point near the equator and a zone of high seismicity is found in the neighborhood between the island of St. Paul and the Romanche deep. The deeps in the same neighborhood, which are an abnormal feature for the Atlantic sea-bottom, may be in part of similar origin as the abnormal deep straits near bending-points of rows of islands.

The long ridge of the Central Atlantic area has been explained in several different ways, *f. i.*, as the beginning of a zone of arcuate folding, as the highest parts of a subsided continent, as a ridge of volcanic origin and as the filling of an originally narrow gaping fracture which opened to the present Atlantic Ocean by horizontal movement of continental areas.

The application of the comparative tectonic method points to movements with unequal velocity in a horizontal direction, which may have been going on since a very long time. The present S-shaped ridge may have developed from a simpler form by similar movements as those which characterize the present ridge. Anyhow, those explanations in which the horizontal movements are not taken into consideration do not seem to be applicable.

H. A. BROUWER

DELFT, HOLLAND

JANUARY 10, 1923

THE DEPRECIATION OF THE POUND

TO THE EDITOR OF SCIENCE: Advocates of the metric system will be interested to know that, beginning January 1, 1923, all transactions in grain, meal, bran, potatoes and agricultural seeds in the United Kingdom will be conducted on a price per hundred weight of 112 pounds. This is in conformity with the provisions of the Corn Sales Act of 1921. After December 31, 1922, any contract, bargain, sale or transaction in above named staples will be null and void unless made by weight only and in terms of or by reference to *the hundred weight of 112 pounds.*

Thus a step forward has been taken; but at that only a halting one. The pound is no longer 7,000 grains but only 6,250 grains because a pound now is by law only nine tenths of a pound. Dealers in farm products in Great Britain will still use the short ton and the long ton; but seemingly, the stone, the box,

the barrel, the firkin, the dry quart, the small measure, the peck and the bushel have been amortized. Peace to their ashes! The struggle is now on between the long ton, 1,016 kgs., and the short ton, 907 kgs.

But we can not say too much about British deliberation in these weighty matters; for do we not (we readers of SCIENCE) buy coal and get 2,000 pounds in a ton; while the coal dealer and the United States government get 240 pounds more on each ton? Can it be that we belong to a privileged class?

ALEXANDER MCADIE

CORRECTION

A SMALL but rather serious error occurred in my article, "Note on the fusarium wilt disease of bananas," appearing in SCIENCE of December 8, 1922. In lines 14 and 13 from the end, page 664, the word *inoculated* should be *un*inoculated.

MARK ALFRED CARLETON
CUYAMEL, HONDURAS

QUOTATIONS

THE VIRUS OF INFLUENZA

A RECENT outbreak of influenza in South Africa afforded to Sir Spencer Lister, the well-known bacteriologist, an opportunity of making some important observations which he describes in the *South African Medical Record* of November, 1922. He recalls that when influenza made its appearance in Johannesburg during the pandemic of 1918, Pfeiffer's bacillus—relatively absent in that community before the outbreak—was found by him in no fewer than 53 out of 56 cases dying with pulmonary complications; but his attempts to detect a filter-passing virus either by experiment or by culture failed. It is the more interesting, therefore, to learn that in this recent outbreak he has succeeded in satisfying himself of the presence of an anerobic filter-passing organism similar to that defined by the careful studies of Olitsky and Gates in New York, and confirmed by Gordon in the London outbreak during the early months of 1922, as reported in our columns on August 19, 1922. By sowing in Noguchi medium the filtered naso-pharyngeal washings taken within thirty-six hours of the onset of influenza Lister succeeded in obtaining a culture of the filter passer in 5 out of 15 cases. He comments on the ease with which the presence of this very minute organism may be overlooked without unusual concentration of gaze and accurate focusing. The stain which he found most successful for demonstrating the presence of the organism in films was Loeffler's alkaline methylene blue, the latter a specimen of Grubler's pre-war stock. The size of the organism was 0.15 of a micron, which is smaller than the organism found by Gordon, who estimated it to be 0.2 of a micron in diameter—a difference probably to be ascribed to the different methods of staining, as the latter observer employed prolonged staining in Giemsa's solution; he has seen preparations of Lister's organism, and agrees that it is identical with that observed by him in films of the nasal secretion and in cultures from the London cases. Lister has taken matters a stage farther than previous investigators by carrying out a preliminary experiment on human volunteers with cultures of this filter-passing organism. Sixty c. cm. of a culture in the second generation were divided into three portions—one third was placed in a spraying bottle, one third passed through a Berkefeld V filter and the filtrate placed in a second bottle, and the remaining third treated for half an hour to 56° C. and placed in a third spraying bottle. Six individuals were then sprayed with the unaltered culture, seven received the filtrate, and six the heated culture, about 1.5 c. cm. being sprayed into the nose and throat of each volunteer. The only one of these nineteen volunteers who complained of any discomfort had received the unaltered culture, and developed a typical attack of uncomplicated influenza beginning nineteen hours after spraying. The minute bodies were observed in smears of his nasal secretion, and a nasal washing was filtered through a Berkefeld candle. This filtrate on cultivation in Noguchi medium gave in five days a profuse growth of the organism. Two other individuals also in this first group that received the unaltered culture had a slight rise of temperature, and one of them showed a well marked leucopenia. Although, as Sir Spencer Lister is careful to point out, this result is not sufficiently conclusive to establish the filter passer as the cause of influenza, it is distinctly