through infected areas in Africa. Under government rules any person who has been in a yellow fever area is forbidden to enter British India until nine days after exposure, unless he has been inoculated or is protected by a previous attack.

THE U. S. Civil Service Commission has announced examinations for "Junior Professional Assistant and Student Aid" designed to recruit college graduates and junior and senior students for positions in the government service. Optional branches include (all in the junior grade at $2,000 a year): agricultural economist, agronomist, aquatic biologist, archivist, bacteriologist, biologist, chemist, entomologist, forester, geologist, junior in household equipment, olericulturist, pomologist, public welfare assistant, range conservationist, soil scientist, State Department assistant and statistician. A four-year college course leading to a bachelor's degree is required, with major graduate or undergraduate study in the field of the optional subject. Senior or graduate students may be admitted to the examination, and may, upon attaining eligibility, receive provisional appointment, but can not enter on duty until evidence of the successful completion of the required college course is furnished. Applicants must not have passed their thirty-fifth birthday. Student aid positions pay $1,440 a year. Usually employment is during the school vacation periods; when furloughed, appointees may return to their college studies. Applicants for these positions must not have passed their thirteith birthday. Applications for both these examinations must be on file with the Washington office not later than February 3.

DISCUSSION

CONTINENTAL DRIFT AND PLANT DISTRIBUTION

NORTH AMERICA and Eurasia, which comprise the major part of the earth's land surface, lie entirely within the Northern Hemisphere, and it is evident that the two continents have always been more or less intimately connected. This is shown especially in the marked similarity of the vegetation, particularly in the higher latitudes.

There are many identical or closely related species throughout the Arctic and subarctic zones, including species of pines, spruces, firs and some other conifers, as well as some deciduous trees, and shrubs like the birches and willows. Further south, in the more temperate latitudes, such common deciduous trees as oaks, chestnuts, beech, maples, elms and others are much the same, in North America and Eurasia.

The greater part of North America is north of the Tropic of Capricorn and extends beyond the Arctic Circle. Practically the whole of the United States is within the "temperate" zone. Except for the Pacific Coast and the Gulf States the climate is a pronounced continental one, with wide range of temperature between summer and winter; and for the most part, winter is a season of almost complete cessation of active vegetation.

The southern continents, South America, Africa and Australia, are separated by the great oceans, nevertheless they have much in common in their vegetation, indicating some former land connections.

The major parts of South America and Africa lie within the Tropics. The southernmost point of South America, Cape Horn, is less than 60° S. There is nothing corresponding to the Arctic and subarctic floras of the Northern Hemisphere, and the land areas of the South Temperate zone are relatively limited in extent. The climate is more of an insular than continental type, and there is no such difference between summer and winter temperatures, as occurs in corresponding northern latitudes.

A comparison of the north and south temperate floras of the Western Hemisphere shows they have little in common except some cosmopolitan genera. The conifers and most of the dominant deciduous trees and shrubs of North America are absent from South America. The conifers of South America are austral genera, absent from North America, *e.g.*, Araucaria, Podocarpus, Fitzroya, and others, while there are many evergreen Angiosperms, *e.g.*, Myrtaceae, Proteaceae, unknown in temperate North America.

While there is thus little connection between the temperate floras of North and South America, there are many common genera and even species in Chile and New Zealand—separated by the whole Pacific Ocean; and the tropical floras of equatorial Africa and South America have also many common genera and even species. An exception to the rule of the absence of North American temperate species in South America is seen in a considerable number of common species in Central Chile and California. This is presumably a case of migration along the continuous mountain range extending along the Pacific Coast from Chile to Alaska.

FOSSIL EVIDENCE

The many investigations of the fossil floras of North

America indicate that the Tertiary genera and some species were much like those of the present; but the geographical distribution has in many cases shifted. Most remarkable is the occurrence in Greenland and Alaska, actually well within the Polar Circle, of fossils belonging to genera now found in warm temperate or even sub-tropical regions.

It is difficult to imagine any possible conditions of climate in which these plants could grow so near the Pole, deprived of sunlight for many months of the year. The occurrence of so many related species in the at present widely sundered southern continents can be explained only on the assumption of some former land connections. The theory of Continental drift has been proposed by several writers, notably the recent volume[1] of Dr. A. S. du Toit. du Toit is influenced by the work of Wegener, but differs from Wegener in assuming two primordial continents, a northern one, Laurasia, and a southern one, Gondwana, instead of Wegener's "Pangaea." From Gondwana were separated the four present southern continents, which finally drifted to their present locations. This theory would best explain most of the problems in the geographical distribution of the floras of the Southern Hemisphere.

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SCLEROTIUM BATATICOLA, A CAUSE OF DAMPING-OFF IN SEEDLING CONIFERS

Sclerotium bataticola Taub. was isolated from young Norway spruce seedlings by Dr. L. W. R. Jackson, pathologist at the Allegheny Forest Experiment Station, in 1935. He later turned over cultures of this fungus to the writer, who has found that it attacks the germinating seeds and early seedlings of Douglas fir (*Pseudotsuga taxifolia* Brit.), Norway spruce (*Picea Abies* (L.) Karst.), American larch (*Larix laracina* (DuRoi) Koch), and the following species of pine-jack (*Pinus Banksiana* Lamb.), red (*P. resinosa* L.), Scotch (*P. sylvestris* L.) and Western yellow (*P. ponderosa* Dougl.). The inoculation experiments were conducted in the laboratory and greenhouses at the Morris Arboretum of the University of Pennsylvania. Pre-emergence and post-emergence damping-off occurred in all species mentioned. *Sclerotium bataticola* was reisolated from all stages of damped-off seedlings.

Under the conditions of these preliminary experiments, the pathogenicity of *Sclerotium bataticola* was thus confirmed for the species of conifers mentioned.

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[1] "Our Wandering Continents." London, 1937.

PHYSICS IN NAZI GERMANY

IN SCIENCE for November 1, there was published a letter from an unidentified correspondent in Russia, which seems to imply that the Nazi authorities in Germany condemn "theoretical physics" as "Jewish physics" because of its Jewish origin. Is it not far more likely that the present masters of Germany discredit those particular branches of theoretical physics which are commonly known as quantum theory and relativity because they do not find them useful, and call them Jewish to disparage the Jews?

We in America hate tyranny—whether it be tyranny of men or tyranny of ideas. We should accord abtruse theories respectful consideration if they are both honest and able attempts to account for observations not previously fully accounted for, but we should not permit them to tyrannize. Your correspondent, however, disparages Stork because "it is obvious that the author tries to refute the modern theory of quantum mechanics." Since when has this become an offense? Quantum theory has not been deified in America, and undoubtedly there are still "thirty thousand men in Israel" who have not bowed down before it. Endeavors to confirm the quantum theory are still made in abundance. Should the few who seek unification of science along other lines be disparaged as necessarily anti-Jewish?

The true status of these two branches of modern physics, so far as the general public is concerned, is about as follows: Even Mr. Einstein has not yet been able to reconcile relativity and quantum theory, though he has made the endeavor to do so almost a life work. There has been no derivation of the electromagnetic theory from the principles of quantum mechanics, although a reconciliation between the two was promised and has been hoped for. Even Bohr now says that quantum principles do not apply in nuclear physics.

Relativity has not been applied to any attempt to control phenomena. Quantum terminology has been adopted in spectroscopy, and is used in all spectral classification work, there being as yet no other. The "numerous remarkable discoveries" attributed to quantum theory are at least chiefly due to classification schemes, and not necessarily to the idea of monochromatic unidirectional radiation quanta produced by losses of energy by moving electrons. The electromagnetic theory, however, has been vastly extended in its usefulness.

There seems to be a need for search for modes of interpreting phenomena that are not bound *a priori* to any postulates that seem irreconcilable to what is too often referred to disparagingly as "classical theories."

Nazis may couple men and ideas for the purpose of