

on the theory, widely accepted among geologists, that the continents really are like rafts floating in water. They consist of masses of lighter rock, mostly granite, floating in a heavier rock that is not wholly rigid, but rather yielding under a burden after the fashion of the traditional molasses in January, or oozy asphalt on a hot summer street. The extreme viscosity of such "gummy" rocks would account for the fact that the continent-rafts are still tilting, though the last fragments of the great glaciers melted off the face of northern Europe some eight or ten thousand years ago.

If the northern ends of the continents are rising, a compensating sinking should be expected to the southward. Some evidences that such a thing is occurring have been obtained, but they are rather too equivocal to be satisfying to scientists, and Dr. Gutenberg recommends further close study of the subject of sinking coasts.

Science News Letter, August 26, 1933

VOLCANOLOGY

Volcanic Eruptions Possible in Arizona

VOLCANIC outbursts may occur some day in northern Arizona, in the region of the San Francisco Peaks, a group of lofty and well-known mountains. A study of a number of eruptive centers in this area by Harold S. Colton of the Museum of Northern Arizona strongly suggests that these were formed by successive outbursts, separated by fairly long time intervals. Recent earthquakes in northern Arizona seem to have centered under the San Francisco Peaks, and Mr. Colton interprets this as evidence that the volcanism of this region is not yet dead.

Science News Letter, August 26, 1933

PSYCHIATRY

Two Mental Diseases Really Five, Statistical Study Shows

THE MANIC-depressive and dementia praecox psychoses are not two separate mental diseases, but really five diseases all of them related more or less closely to each other by common underlying causal factors, it is indicated by a study just completed by Dom Thomas Verner Moore, of Catholic University, Washington. His report is published as one of the University's *Studies in Psychology and Psychiatry*.

Father Moore made use of a new statistical technique. Instead of trying to fit each patient into some arbitrary category according to previously developed schemes of diagnosis, he listed a number of well-known symptoms and gave each patient a numerical rating by a specially constructed scale to indicate the extent to which he displayed that symptom. Among these symptoms were included some of an emotional nature, such as irritability, abnormal feeling of exultation, giggling, depression, and so on. Another group included abnormalities of thought such as delusions, loss of memory, defect of perception, and the like. A third group included matters of history such as previous attacks, insane relatives, and alcoholism in the family.

Statistical methods showed some of these symptoms to be closely related, in the sense that a general factor or identical group of causes binds them together. Symptoms bound together by a general factor are termed syndromes. The five

syndromes, made up of symptoms usually taken as signs of either manic-depressive psychosis or dementia praecox, are: catatonic, deluded and hallucinated, paranoid irritability, cognitive defect and constitutional hereditary depression.

The catatonic syndrome, for example, contains the following symptoms; mutism, or refusal to talk; negativism, or refusal to comply with any simple request; refusal of food; and the adopting and maintaining of fixed or peculiar attitudes such as standing on one leg or staring into space. These symptoms are shown by the mathematical technique to be signs of the same thing.

The five syndromes are proved by their intercorrelations with each other to have also underlying them a common group of causal factors. Father Moore pointed out that Rüdín and others have shown that the heredity of dementia praecox must be due to two Mendelian recessive traits. The present work suggests that only one of these factors need be specific for dementia praecox; the other may be common to dementia praecox and manic-depressive insanity.

The study points out that the manic-depressive and praecox disorders are dominantly an upset of emotional life. Intelligence defect is also involved but is relatively unimportant. It is pointed out that normal mental life must have the normal counterpart of the syndromes by which the insanities are constituted. Corresponding to intelligence defect there is the general factor underlying normal intelligence; corresponding to the general factor underlying anxiety and depression are normal balanced elements of emotional life of a definite nature; corresponding to irritability and tantrums, another normal factor in emotional life, and so on.

Science News Letter, August 26, 1933

A \$3,000 crop of spinach was destroyed in one night on Staten Island by a cloud of poisonous smoke coming over from New Jersey.

The Smithsonian Institution has received the smallest jointed doll on record: a wooden doll from Switzerland, slightly over half an inch tall.

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