

the cantonment at stated intervals and with army surgeons conduct thorough mental tests and physical examinations. The new psychopathic building at the Spring Grove State Hospital, designed for acute cases of mental disease, has been offered to the government, and if it is accepted, patients from Camp Admiral will be treated there. The psychopathic building will also be useful in treating soldiers returned from the front, 18 to 20 per cent. of whom, it has been found in England, are suffering from mental breakdown, temporary or permanent.

UNIVERSITY AND EDUCATIONAL NEWS

AUSTIN C. DUNHAM, of Hartford, has offered as a gift to the Connecticut Agricultural College at Storrs, his Newington farm, which he has made into one of the best equipped farms in the state. Mr. Dunham has spent about \$50,000 in improving the property and offers it to the college simply on the condition that it be used for school purposes. The farm consists of 130 acres and has at present forty head of cows and heifers and sixty-five pigs. Four silos have been built, housing 150 tons of silage, and eighty tons of hay have been gathered.

ACCORDING to a decision handed down by the Supreme Court of Connecticut, Yale University must pay to the state inheritance taxes amounting to about \$34,000. The university inherited about \$750,000 from the estate of Justus B. Hotchkiss. The Probate Court decided that it was not liable to taxation on the ground that Yale, being exempted by law from paying taxes on property in this city, was thereby constituted a public institution receiving state aid.

Two members of the faculty of Cornell University who retired this year have been elected to emeritus professorships. They are George S. Moler, emeritus professor of physics, and R. C. Carpenter, emeritus professor of experimental engineering.

DR. VICTOR C. ALDERSON, consulting engineer of Boston, has been tendered the presi-

dency of the Colorado School of Mines at Golden, Colo. Dr. Alderson served as president of the school for four years, retiring three years ago. He has not yet indicated whether he will accept.

PROMOTIONS in the faculty of the New York State College of Agriculture have been made as follows: Assistant professors promoted to the grade of professors: J. R. Schramm, botany; R. H. Wheeler, extension teaching; H. O. Buckman, soil technology.

PROFESSOR V. ASCOLI, of the chair of medical pathology of the University of Pavia, has been appointed professor of clinical medicine at Rome to succeed Bacelli.

DISCUSSION AND CORRESPONDENCE

CLIMATIC INDEX OF BONNEVILLE LAKE BEDS

BECAUSE of the fact that they have been thought to furnish undoubted stratigraphic testimony in support of the conception of the duality of the Glacial Epoch the lacustral deposits of the Great Salt Lake basin of Utah hold at this time an especial interest. Where best exposed these beds occupy a vertical space of about 100 feet; but their total thickness is without question considerably greater than this figure. The main body of the formation comprises fine laminated calcareous materials, of uniform texture and yellow color. An upper section, of irregular thickness, from 2 to 20 feet, is notably limy, white and more or less indurated in certain layers. The white marly upper capping is sharply separated from the yellow lower beds by an irregular line of juncture which has every appearance of being a marked plane of unconformity.

The common historical interpretation of the general section is briefly this: The lower yellow beds are regarded as representing river silts deposited in the lake over a very long period of time when the early Bonneville water-level was nearly as high as the later Bonneville shore-line. The white marly beds are depositions of a shorter high-water stage of the lake. The irregular line between the white and yellow sections are viewed in the

light of an unconformity, the interval represented being a stage between two high water marks when the old lake-waters completely dried up. Early Bonneville yellow beds are correlated in time with a first epoch of humidity superinduced by conditions of glaciation; while the white later Bonneville beds belong to the second Glacial epoch. The two parts of the section are thus represented as being separated by an erosional interval of long duration, occupying a time between two epochs of large rainfall and notable ice-forming.

Two features in particular militate strongly against these deposits either being normal stream-silts or being laid down during two distinct epochs separated by a long epoch of excessive dryness. This simpler and very different interpretation for the phenomena presented does not postulate violent and frequent changes of climate. It appeals to no other than the ordinary climatic conditions and geologic processes that prevail to-day in the region. It takes into account only the familiar geological activities of the desert.

Close examination of the deposits discloses the fact that they are not typical stream-silts, but that they have a grain very much coarser. In size the individual particles appear to be about midway between those of normal clay and fine sand. Although obscurely laminated the material in all physical aspects seems to be essentially loess or adobe. Thus, instead of being normal river-silts swept into still water these deposits really represent dusts, borne by the winds from the neighboring deserts, that have dropped on the surface of the lake waters and have settled to the bottom.

Compared with desert deposits of other regions the white marly upper beds of the section which have such a variable thickness are essentially what the Mexicans call *caliche*. It is formed through ordinary soil tension by which lime salts of porous formations below are carried to the surface of the ground, where the water evaporates, leaving behind the solids. In some places there is sufficient lime deposited interstitially to give the beds the aspect of chalk. Upon further induration some layers passed into limestone.

The juncture of the yellow and white beds is a sharp, irregular line that is easily mistaken for an erosion unconformity. That it is not at all probable that in the Bonneville basin this line actually represents unconformable relationships between the beds above and those below is clearly indicated by the fact that the phenomenon is a common one throughout arid lands where porous formations reach sky.

The yellow Bonneville clays do not appear, therefore, to represent a deposit which was laid down during a high-water precursor of the high-stage Lake Bonneville; and the irregular line separating the yellow and white sections does not stand for a long interlacustrine epoch when the lake waters were completely desiccated, during a dry interglacial time. The white marls seem to be very recent in formation, produced directly from the yellow clays long after Bonneville waters had finally receded. Their especial climatic significance is manifestly very different from that formerly postulated. The ascribed peculiarities are really every-day desert phenomena.

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DES MOINES, IA.

INTERNAL TELIA OF RUSTS

TO THE EDITOR OF SCIENCE: A recent article¹ lists up the references in pathological literature regarding the production of internal rust spores. The present writer in 1912² described such internal production of teliospores in the leaf of *Xanthium Canadense*, in the following words:

Within the mixture of parenchyma cells and mycelium, which replaces the normal tissue, there are cystlike bodies which are composed of masses of mycelium. These objects are hollow spheres, and from the inner surface arise telial spores exactly similar to those borne in the normal way upon the exterior of the leaf.

¹ "Discovery of Internal Telia Produced by a Species of *Cronartium*," by R. H. Colley, *Jour. Agr. Research*, VIII., No. 9, February 26, 1917, pp. 329-332.

² "Relations of Parasitic Fungi to their Host Plants," *Bot. Gazette*, LIII., No. 5, May, p. 381.