been signed by the chief of the Forest Service and the trustees of the camp for the use of certain areas as the headquarters experimental tract of the Federal research men. This will be one of a number of centers of field work which will be developed in time by the Allegheny Experiment Station in New Jersey, Pennsylvania, Delaware and Maryland. The Camp Ockanickon tract consists of about 500 acres, owned jointly by the county Y. M. C. A.'s of Burlington, Camden, Gloucester and Monmouth. On it are two artificial lakes, one of which already has been developed for recreational purposes. The agreement gives the experiment station the use for a period of years of the land lying back from the lakes.

UNIVERSITY AND EDUCATIONAL NOTES

DR. R. C. WALLACE, professor of geology and mineralogy in the University of Manitoba, will take up his work as president of the University of Alberta on September 1. Dr. Wallace succeeds Dr. H. M. Tory.

DR. R. S. MULLIKEN has been appointed an associate professor in the department of physics at the University of Chicago.

HENRY E. STARR, assistant professor of psychology at the University of Pennsylvania, has been appointed professor of psychology at Rutgers University.

RECENT promotions at Harvard University include that of Dr. H. H. Plaskett to be associate professor of astrophysics, Dr. E. D. Churchill to be associate professor of surgery, Dr. I. J. Walker to be clinical professor of surgery, and Dr. Channing Frothingham to be associate clinical professor of medicine.

DR. EDWIN P. LEHMAN, of the Washington University Medical School, St. Louis, has been appointed head of the department of surgery and gynecology in the University of Virginia.

EDWARD ANDERSON, instructor in steam and gas engineering at the University of Wisconsin, has been appointed assistant professor of mechanical engineering in charge of courses in metallography and heat treatment at the University of Nebraska.

DR. E. A. POHLE, of the University of Michigan, has been appointed head of the department of radiology at the University of Wisconsin.

DR. JOHN F. NORTON, associate professor in the department of hygiene and bacteriology of the University of Chicago, has resigned.

T. C. VANTERPOOL has been appointed assistant professor of biology at the University of Saskatchewan.

M. E. FAURÉ-FREMIET has been appointed professor of comparative embryology in the Collège de France to succeed the late M. Henneguy.

BARON DR. KITASATO, dean of the Keio Medical College and chief of the college hospital, has retired and is to be succeeded in the college by Dr. T. Kitashima.

DISCUSSION

AN X-RAY EXAMINATION OF THE ANHYDROUS Na_2SO_4–$Al_2(SO_4)_3$ SYSTEM

THERE has been some discussion recently as to nature of the anhydrous product, commonly called sodium aluminium sulfate, that is obtained by the high temperature evaporation of an aqueous solution containing equal molar proportions of sodium and aluminium sulfates. The product is said to differ considerably from a mechanical mixture of anhydrous sodium and aluminium sulfates, especially in that it is less hygroscopic. It became of interest to determine whether this difference was due to different physical conditions, such as particle size, to the solid solution of one salt in the other, or to actual compound formation.

A sample of the substance in question was prepared by evaporating to dryness a solution containing equal molar quantities of the two salts and heating the resultant solid to 400° C. During the evaporation the temperature was kept near the boiling point so that there was no possibility of alum formation. An X-ray diffraction pattern made of the powdered substance with molybdenum Kα radiation was entirely different from those of the anhydrous sodium or aluminium sulfates and showed no lines characteristic of either. A series of ten samples were prepared in the same manner, using various proportions of the two salts. Those considerably richer in aluminium sulfate than the first showed lines of aluminium sulfate superimposed on the pattern of sodium aluminium sulfate. The positions of the lines of the latter were unaltered. Those samples containing an excess of sodium sulfate gave the pattern of sodium aluminium sulfate together with some new lines not due to sodium sulfate. The position of the sodium aluminium sulfate lines was again unchanged. It was noted also that the position of the new lines was independent of the relative concentrations of the two components.

These observations seem to establish conclusively that sodium aluminium sulfate is a definite compound and not a mechanical mixture or a solid solution of one salt in another. A mechanical mixture of the two substances would have given the pattern of one superimposed upon the other. A solid

solution might give lines not characteristic of either, but the position of the lines would be altered by a change of relative concentration. Their position, however, was unchanged, even when such an excess of either of the original salts was present that the lines of the minor component were barely visible.

The appearance of new lines with a fixed position in the sodium sulfate-rich samples reveals the formation of a second double sulfate of the two metals. The composition of this salt has not been established, but it contains more sodium sulfate than represented by the formula $Na_3Al(SO_4)_3$.

The complexity of the pattern of sodium aluminium sulfate indicates a low crystal symmetry and no attempt at an analysis has been made so far. The patterns, of course, bear no resemblance to those of soda alum, which is cubic.

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ANTS AS PROSPECTORS

IN the course of the field investigation of a number of fluorspar deposits in New Mexico occasional information of value was obtained from ant-hills.

A single instance will serve to illustrate their value. In the Little Florida Mountains near Deming, Luna County, a number of fluorspar veins in volcanic agglomerate have been exposed for a short distance. The veins carry iron and manganese oxides, and the outcrop is often concealed. An attempt to follow one of the larger veins beyond the portion exposed by prospect pits failed until the writer resorted to the examination of the materials of the ant-hills along the general projection of the vein. This method was found to be successful in tracing veins concealed by surface material. A mineral analysis of one ant-hill on a concealed fluorspar vein by the use of Thoulet's solution gave the following results:

Lights; rhyolite, quartz, feldspars, etc.	55.2 per cent.
Fluorite	22.5 " "
Iron and manganese oxides	22.0 " "

Another case in which the materials of ant-hills was of geological use was related to the writer by Mr. W. B. Lang. In an areal field investigation in Idaho in a region of much weathered igneous rock the presence of quartz crystals in the material of the ant hills was found to be a satisfactory criterion for the identification and mapping of rhyolite.

The writer is interested in hearing of other cases in which this method has been found to be of value, as it has doubtless been employed many times.

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MAINTAINING THE STANDARD AND THE SCIENTIFIC USEFULNESS OF THE NATIONAL PARKS

PROBABLY most of the readers of SCIENCE have, within the last few months, received appeals from certain scientific and "conservation" organizations to write to their congressmen and senators opposing measures to add to the national park system areas which the parties sending out these appeals claim are inferior and unsuited for national park purposes. They warn that there is "serious danger of lowering the standard of the national parks" and claim that no areas should have a place in that park system unless they have natural scenic wonders of outstanding character, such, for instance, as those of the Yosemite or the Yellowstone.

This is a matter in which the scientific men and organizations should do some thinking for themselves instead of letting it be done for them by others. Why should the purposes of the national parks be limited to preserving extraordinary scenic places and to catering to vacationists? Why should they not do some service for the sciences of ecology, zoology, botany, etc., by preserving in their natural conditions some areas that will not be overrun and trampled upon by hordes of tourists? Modern transportation methods are resulting in settling and commercially developing almost every part of our country. The national parks are the chief hope of retaining any tracts in a natural state.

Certainly we should include in the parks the finest and the least spoiled areas that a given region of the country affords, but if it contains no Grand Canyons or Mt. Rainiers that is no reason why every place should be given over to destructive exploitation or why those who have not the time and money to travel long distances should not have such attractive natural scenery as exists in their own part of the country preserved for their enjoyment and for protecting the animals, plants and ecological characteristics of the region for scientific study. No claim can be more preposterous than that the great scenic features of the parks in the western states will lose a particle of their interest or beauty if we also preserve from destruction some of the beautiful though less extraordinary areas in the east or south.

The state of Pennsylvania has recently had to appropriate $450,000 and its citizens have had to raise an additional $200,000 by private subscription to preserve the last remnant of the white pine forest which covered thousands of square miles in the eastern states a couple of centuries ago. How long will it be before we are buying back for national parks at enormous