because they were already performing chemical duties, 34 were requested to remain with their military organizations because they were more useful in the military work which they were doing, 12 were furloughed back to industry, 165 were not chemists in the true sense of the word and were, therefore, ordered back to the line, and 1,294 have been placed in actual chemical work. There were being held for further investigation of their qualifications on August 1, 1918, 432 men. The remaining 23 men were unavailable for transfer, because they had already received their overseas orders. Each case has been considered individually, the man's qualifications and experience have been studied with care, the needs of the government plants and bureaus have been considered with equal care, and each man has been assigned to the position for which his training and qualifications seem to fit him best.

SCIENTIFIC ORGANIZATIONS OF THE ALLIED NATIONS

AT the invitation of the Royal Society, a conference between representatives of the Allied nations will be held in London on October 9 to discuss the future conduct of scientific organizations. According to *Nature* it is expected that representatives from the academies of Paris, Rome, Tokyo and Washington, as well as nominees of the governments of Belgium, Portugal and Serbia, will attend. A memorandum proposed by a committee of the Royal Society points out that international scientific organizations and conventions may be divided into four groups, according to their objects and methods of procedure. A first group consists of those important agreements which fix the standards of measurements, and are essential not only in purely scientific investigations, but also in the development of many industries. A second group contains associations definitely formed for the investigation of scientific problems in which coordination of observation is essential. A third group, which hitherto has not been large in numbers, but presents some special features, embodies the efforts to organize undertakings that might be carried out in one locality, but is more economically dealt with by a division of work. The most prominent example of this type is the arrangement made between eighteen observatories to form a photographic chart of the heavens. The organization dealing with the "International Catalogue of Scientific Literature" may also be included in this group. In the fourth group is placed the large number of congresses called together by workers in some one department of science, and mainly intended to foster friendly personal relationships between those who pursue similar aims in different countries. There is, finally, in a group by itself, the International Association of Academies, which aims at coordinating the activities of international undertakings, and organizes work for which special permanent bodies do not exist and are not required. The council of the Royal Society will submit the following questions as subjects for discussion at the forthcoming conference: (1) Is it desirable for the Allied nations to establish organizations for scientific cooperation among themselves? (2) If this be agreed upon, what should be the particular forms of organization to be aimed at in geodesy, seismology, meteorology, etc? (3) Should particular academies be asked to submit proposals on those undertakings in which they have taken the leading part, such as: (*a*) The Académie des Sciences on the Commission Métrique and the Bureau International des Poids et Mesures; (*b*) The Royal Society on the International Catalogue of Scientific Literature? (4) What representations should be addressed to the governments with regard to those organizations which have hitherto received their support? The conference at present is intended to deal only with scientific subjects, but similar questions no doubt also arise on the literary side.

SCIENTIFIC NOTES AND NEWS

SAMUEL WENDELL WILLISTON, professor of paleontology in the University of Chicago, has died at the age of sixty-two years.

MAXIME BÔCHER, professor of mathematics in Harvard University, has died at the age of fifty-one years.

Mr. John O'Connor, Jr., one of the assistant directors of the Mellon Institute of Industrial Research of the University of Pittsburgh, has gone to Washington to assume the duties of civilian appointment in the Plan and Scope Division of the Quartermaster General's office.

Professor Miles S. Sherrill, of the department of chemistry, Massachusetts Institute of Technology, has been granted a leave of absence from the institute and has commenced work on explosives for the Ordnance Department.

Dr. Creelman, commissioner of agriculture in Ontario and president of the Ontario Agricultural College, has left for England, where he will consult with the directors of the University of Vimy Ridge, with respect to the agricultural training of soldiers.

Dr. F. Mollwo Perkin has been elected president and Mr. H. A. Carwood secretary of an association of chemists engaged in the oil and color and allied trades which has been organized in England.

The John Wimbolt prize in civil engineering at Cambridge has been awarded to Mr. E. B. Moullin, B.A., of Downing College, formerely of Newcroft School, Bournemouth, for an essay on "Some problems of gaseous explosions."

The Moxon medal of the Royal College of Physicians of London has been awarded to Dr. F. W. Mott.

Dr. A. S. Pearse, of the University of Wisconsin, has returned from a trip to Maracay, Venezuela, where he studied the fishes of Lake Valencia.

Professor C. M. Smith, of the department of physics, Purdue University, spent the summer in scientific work at the Bureau of Standards, Washington, D. C.

Dr. E. C. Shorey, in charge of the division of chemical investigation in the Bureau of Soils, U. S. Department of Agriculture, has resigned to accept a position with the National Aniline and Chemical Co., Inc., at Marcus Hook, Pa.

Odell E. Lansing, assistant botanist in the Field Columbian Museum, died by suicide on September 11, aged fifty-one years.

M. Charles Joseph Etienne Wolf the distinguished French astronomer, died on July 4, at the age of ninety years.

Mr. W. M. Crowfoot, of Beccles, Suffolk, who died on April 6 at eighty years of age, bequeathed a collection of exotic butterflies and moths to his wife for life and then to the Natural History Museum, University College, Nottingham; a collection of shells from the Paris basin, his cragshells, and other fossils to the Norwich Museum; a collection of shells from the Italian Pliocene basin and a collection of marine, land and fresh-water shells to the Ipswich Museum.

Since the establishment of the *Journal of Geography*, formerly the *Journal of School Geography*, over twenty years ago, the magazine has been under personal management and control. During the first thirteen years Professor R. E. Dodge of the Teachers College, New York, carried most of the responsibility. During the last eight years the present editor Professor Ray Hughes Whitbeck, of the University of Wisconsin, has carried the major part of that responsibility. During the past summer, the American Geographical Society of New York offered to take over the complete ownership and control of the *Journal* and the offer has been accepted. During the remaining four months of 1918, the present editorial and business management will continue.

The autumn meeting of the Institute of Metals was held in the rooms of the Chemical Society, London, on September 10 and 11. We learn from *Nature* that among the communications submitted were: The Resistance of Metals to Penetration under Impact, including a note on The Hardness of Solid Elements as a Periodic Function of their Atomic Weights, Professor C. A. Edwards; Grain Growth in Metals, Dr. Z. Jeffries; Rapid Recrystallization in Deformed Non-ferrous Metals, Mr. D. Hanson; The Influence of Impurities on the Mechanical Properties of Admiralty Gunmetal, Mr. F. Johnson, and A Peculiar

Case of Disintegration of a Copper-Aluminium Alloy, Dr. R. Seligman and Mr. P. Williams.

THE Società italiana per il Progresso delle Scienze, the head offices of which are in Rome, has issued, as we learn from *Nature,* the program of the tenth meeting, which is to be held in Pisa on October 16–19 under the presidency of Professor Ferdinando Lori and the secretaryship of Professor Vincenzo Reina. The success of the meetings at Rome in 1916 and at Milan and Turin in 1917 has convinced the council that it will be interpreting the wishes of the members in continuing even in war-time to maintain its activity in promoting the advancement of knowledge in the country. Mathematics, physics, chemistry and aeronautics do not figure in the proceedings of the sections, which are to be devoted mainly to geological and mineralogical papers in Class A, biological and medical in Class B, and economical in Class C. It is the object of the meeting to pay a large amount of attention to the study of the mineral resources of Italy. At the same time the Italian Thalassographic Commission is organizing a subsection of Class B on fisheries, and is presenting an annual report, while similar reports are being presented by the Glaciological Committee and the National Commission for the Development of Scientific and Industrial Progress. The Italian Association for the Study of Building Materials is to meet in Pisa at the time of the congress. The opening meeting of the scientific gathering is to be held on October 16, at the university, when an inaugural address will be given by Professor Raffaello Nasini on "A proposal for an inventory of Italy's mineral wealth." In addition to the sectional meetings, nine general lectures have been arranged for the mornings of the subsequent days, while the sections will meet in the afternoons, and an excursion will take place on the Sunday.

The British Medical Journal states that the council of the Paris Medical Faculty has drawn up a report setting forth a number of reforms and extensions which it is proposed to make in the scope and methods of its teaching work. For the teaching of pathology cinematographic apparatus will be installed in the lecture theaters and collections of films are to be made. One of the two chairs of internal pathology is to be transformed into a clinic of infectious diseases. The practical curriculum is to be completed and supplemented by a large scheme of free clinical teaching in which all the members of hospital staffs who wish to do so will take part. With the object of ensuring almost full autonomy to the services of the faculty by securing the most favorable organization for the treatment of patients and the instruction of students a commission of studies has been set up which includes representatives of the Ministries of Public Instruction and of the Interior, the Prefecture of the Seine, the Municipal Council, the University, the Faculty and the medical staffs of the hospitals. Arrangements will be made for the purpose of attracting to Paris men of science, doctors and students from foreign countries. The government has favorably received a request that it should provide funds for the improvement of existing services and for the creation of others, particularly an institute of medical biology. Internal improvements have been made in the library and museums of the faculty. A special committee has been engaged in elaborating the statutes of a society of friends of the Paris Medical faculty.

THE *Journal of Industrial and Engineering Chemistry* states that the straits to which Germany has been reduced by the cutting off of oil supplies from outside has led to some remarkable discoveries or at least communications of discoveries. Professor R. France, of Munich, claims to have discovered a new source of oil in certain cryptogamic plants growing in Bavaria to which he has given the name "Esaphone." He calculates that by adding thereto certain other parasitic plants growing in Germany some 1,200,000 kilos of oil of excellent quality can be obtained per annum. As it does not congeal except at about 40° below zero, he suggests that it would be highly useful for aeroplanes and the engines of vessels going to arctic regions. Professor France

also states that by collecting the drops of resin which collect in spring upon felled pine and fir trees about 60 liters of oil could be secured from every cord of wood.

The Technical Department, Aircraft Production, of the Ministry of Munitions of Great Britain has prepared a detailed report on an example of the new German 300-h.p. Maybeck aero engine taken from a Rumpler biplane which was brought down in France in January last. These engines are described in the report as undoubtedly representing a great improvement in general design and efficiency as compared with the old 240-h.p. Maybach engines found in Zeppelin airships. The quality of the workmanship of every part, including the exterior finish throughout, is exceptionally good, and the working clearances are carried to very fine limits. Every part, nevertheless, shows the usual German characteristics of strength and reliability, combined with standardization and ease of manufacturing in preference to the saving of weight. The engine has six vertical cylinders with a bore of 6.5 in. and a stroke of 7.09 in., and weighs 911 pound complete with propeller boss and exhaust manifold, but without fuel or oil. On an hour's test, running at the normal speed of 1,400 rvolutions a minute, it gave on the average 290 b.h.p., the weight being thus a little over 3 pounds per h.p. The consumption of petrol was 0.55 pint and of lubricating oil 0.038 pint per b.h.p. hour. The C.4 type of Rumpler machine from which this engine was taken is a two-seater biplane designed for long-range artillery reconnaissance and photography. These machines are said to be generally flown at high altitudes—15,000 feet to 17,000 feet—until over the lines, and from French reports the 300 h.p. Maybach engines are more flexible and regular in running than the 260-h.p. Mercédès engines generally fitted in them. Their armament consists of one Spandau gun fixed in front of the pilot's seat and firing through the propeller, and one swivelling gun mounted in the observer's seat behind.

UNIVERSITY AND EDUCATIONAL NEWS

At a meeting of the General Municipal Council and the Chamber of Commerce at Bordeaux on September 10, the proposal to establish in honor of the President of the United States a Franco-American university of applied sciences, commerce and industry was unanimously adopted.

The Birmingham Metallurgical Society has planned to award scholarships at Birmingham University to technical school students in metallurgy. The purpose is to assist boys who otherwise would be unable to afford a university training in metallurgy.

Dr. H. C. McNeil, associate chemist in the Bureau of Standards, has been appointed acting professor of chemistry in George Washington University, Washington, D. C., succeeding Dr. Charles E. Munroe, who assumes the chairmanship of the committee of explosives investigations under the National Research Council.

William C. Morse, of Washington University, St. Louis, has been elected professor of geology at the Mississippi Agricultural and Mechanical College.

Professor Owen W. Mills, formerly of Westminster College, has been appointed professor of biology at Middlebury College.

DISCUSSION AND CORRESPONDENCE

DUAL QUEENS IN A COLONY OF HONEY BEES

During a recent visit, June 3–6, 1918, to the Massachusetts Agricultural College at Amherst, Mass., by the courtesy of Dr. B. N. Gates I was given the unusual opportunity of accompanying him on his inspection of the forty colonies of the bee yard.[1]

It has so frequently been stated that two queens are rarely found in one colony of honey bees that the occurrence of two queens, evidently mother and daughter, living side by side

[1] In addition to many interesting facts of honey bee behavior, I was able to collect material for a morphological study of the developmental stages of the three castes of honey bees. I am deeply grateful to Dr. Gates for his assistance and kindness in securing my material.