scale 1/5,000,000; dimensions 17 × 26½ in., price 25 cents.

The map extends from the Arctic Ocean in the north to the State of Washington in the south, and includes all of the Aleutian Islands and a part of Eastern Siberia. It is intended merely as a base map to which may be added any kind of special information that may be desired. For this reason only national boundaries, the adjacent Canadian provinces, and the names of a few of the important towns are given. The shoreline is compiled from the most recent Coast and Geodetic Survey charts and in respect to southeast Alaska and westward to Kodiak Island, the coast-line is better represented than heretofore. The accumulation of the yearly surveys in the extensive and largely unsurveyed waters of Alaska as here embodied, presents a delineation of the coastline in a more really true shape than heretofore and in this respect the map is more reliable than other existing maps of similar scale.

In addition to this feature, the employment of a more suitable system of map projection adds to the general accuracy. On account of the predominating east and west extent of Alaska, the Lambert conformal conic projection with two standard parallels offers advantages over other projections formerly used in mapping this region. This is the system which came to prominent notice during the World War and was employed by the allied forces in their military operations in France.

The parallels employed as standards are the latitudes 55° and 65°, and along these parallels the scale is true. Between these parallels the scale becomes too small by less than four-tenths of one per cent., which amount is insignificant. At Dixon entrance in southeast Alaska, the former general chart of Alaska on a polyconic projection was in error by as much as ten per cent. due to a system of projection which was unsuited to the shape of the area involved. In the new base map, the projection error in this locality is entirely eliminated. The maximum error of scale of the Lambert projection is only 1 3/4 per cent. This is in the latitude of Pt. Barrow in the north where the scale is too large by this amount. The same amount of error appears in latitude 48° but this is considerably south of Alaska, which is the subject of the map. The polyconic projection had the effect of exaggerating areas in the most important part of Alaska whereas in the Lambert projection the maximum scale error is placed in the least important part of Alaska, and in amount is only one sixth as large as in the polyconic projection.

For the measurement of distances and areas within the extent of the map, an accuracy is thus obtained that is well within the limits of draftsmanship, paper distortion, and our knowledge of this region as a whole.

The selection of a suitable projection with a conformal grid system of one degree units, makes the new outline map a convenient base for the addition of special and useful information. The inclusion of the northwest part of the state of Washington serves as a connecting link with a similar Lambert conformal base map of the United States which has already been published on the same scale.

SCIENTIFIC EVENTS

INVESTIGATIONS OF THE U. S. BUREAU OF MINES ON OZONE AND VENTILATION

THE Pittsburgh Experiment Station of the United States Bureau of Mines, according to a bulletin of the bureau, is working in cooperation with the Research Bureau of the American Society of Heating and Ventilating Engineers on a number of problems which affect each individual in his home life, in his place of business, and especially in those places where many people congregate, as in churches, school-rooms and theaters. It is important to ventilate such places with sufficient fresh air to make every one comfortable enough to be able to work at high efficiency. The circulation of excessive quantities of fresh air imposes a considerable cost on the heating system, therefore an efficiently designed heating and ventilating system introduces the least amount of cooled air con-

sistent with proper conditions for health. In this connection the use of ozone has frequently been proposed and actually tried in a number of places. The ozone is supposed to deodorize and purify the air by the oxidation of organic matter and possibly by killing bacteria.

It is, however, a question as to whether ozone can be introduced in quantities large enough to kill bacteria without producing very serious irritation of the throat and lung tissues. It is also a question as to whether harmful oxides of nitrogen are not produced simultaneously with ozone. Definite information is needed on this subject. The first step in obtaining such information is to work out methods for accurately determining the percentage of ozone and oxides of nitrogen produced for different types of ozone machines and to develop suitable methods for determining the very small quantities of ozone and oxides of nitrogen that may be present in air treated with such machines. Analytical work of the highest precision is required. The gas laboratory of the Bureau of Mines Pittsburgh Experiment Station is now engaged on this problem, working in cooperation with the Research Bureau of the American Society of Heating and Ventilating Engineers which is housed in the same building.

After the chemists have worked out the methods of detecting and analysing these small quantities of ozone and oxides of nitrogen, the next problem will be undertaken in a like cooperation of the two agencies just named working with the United States Public Health Service. Surgeons from this service are detailed to the Bureau of Mines for working on health and sanitation problems. The work is being carried on under the joint general direction of A. C. Fieldner, supervising chemist and superintendent of the Pittsburgh Station of the Bureau of Mines, and Dr. R. R. Sayers, chief surgeon of the Bureau of Mines, by G. W. Jones, assistant gas chemist, W. P. Yant, assistant analytical chemist, and O. W. Armspach, engineer of the American Society of Heating and Ventilating Engineers.

THE PUEBLO BONITO EXPEDITION OF THE NATIONAL GEOGRAPHIC SOCIETY

Neil M. Judd, curator of American archeology in the U. S. National Museum, has returned to Washington from New Mexico where he has been engaged, during the past five months, as director of the National Geographic Society's Pueblo Bonito Expedition. This first summer's explorations in Pueblo Bonito—one of the largest and best preserved prehistoric ruins in the United States—is reported to have been entirely successful and to have prepared the way for more intensive research next season. Over forty dwellings and five large ceremonial rooms were excavated; a considerable collection of artifacts and much valuable data were recovered.

As a unique feature of the National Geographic Society's newest expedition it is proposed to hold an annual symposium at Pueblo Bonito—a conference to which will be invited leaders in various branches of science. The first of these meetings, held late in August, was attended by several archeologists and agriculturists; geologists, botanists and soil experts will be invited to the next conference. Through the willing cooperation of these specialists, each expert in his own branch of science, it is hoped to gain a deeper understanding of the conditions under which the ancient inhabitants of Pueblo Bonito carried on their numerous activities; *i.e.*, the geophysical conditions which obtained in their day, the source and extent of their water supply, their methods of agriculture, the character and variety of their foodstuffs, as well as an index as to their cultural attainments, through careful examination of the archeological data recovered. This is the first instance, it is believed, in which American men of widely differing fields of science have joined in solution of a common problem.

THE STEELE CHEMICAL LABORATORY OF DARTMOUTH COLLEGE

At the dedication of the Steele Chemical Laboratory, according to the account in the Boston *Transcript*, the assembly included Governor Albert A. Brown of New Hampshire, former Governor Pingree of Vermont, Dean