TABLE I

Medium		Results obtained by Broh-Kahn in sulfanilamide culture	Results obtained in culture containing methylene blue (no sulfanilamide present)
Aerobic	lactate	No bacteriostasis	complete reduction
Anaerobic	lactate + nitrate	Good bacteriostasis	no reduction (nitrite formed)

duced the bacteriostatic action of sulfanilamide is clearly manifest.

The unsatisfactory effect of sulfanilamide therapy of closed space infections, empyema, and mastoiditis may be explained by correlating the above data with the demonstration by Menkin[5] that similar experimental infections are accompanied by anaerobic glycolysis, the extent of which depends upon the severity of the induced infection.

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AN ILLUSTRATED CATALOGUE OF MESOZOIC AND EARLY CENOZOIC PLANTS OF NORTH AMERICA

THE accurate identification of fossils is considerably facilitated by the use of illustrated card catalogues. Up to the present no such catalogue of fossil plants is known to exist in this country. During the past three years the writer has compiled a catalogue containing the figures and descriptions of all plant species of the Mesozoic and Paleocene of North America. It is hoped that the compilation may gradually be enlarged to include the remaining Cenozoic species of North America and at least the holotypes of foreign species of both the Mesozoic and Cenozoic.

In compiling the catalogue duplicate copies of all available publications on Mesozoic and early Cenozoic plants were first secured by purchase. To date, 46 monographs and over 80 shorter reports have been utilized. From each of these the figures and descriptions of species were cut out and pasted on the front and reverse sides, respectively, of specially printed 8 by 10 inch cards. In addition to the figure the front of each card contains the following: the original name of the species and its founder, the formation in which the specimen was found, the geologic system to which the formation belongs, the kind of type specimen represented, the name, date and author of the publication from which the figure and description were clipped and the subsequent changes in name and synonymy of the species. The back of each card contains the description and precise locality of each figured specimen.

5 Valy Menkin and C. R. Warner, *Am. Jour. Path.*, 13: 25, 1937.

If duplicate copies of publications were not available for clipping, the figures of species were photographed and the descriptions transcribed from library copies. The catalogue is kept up to date by clipping new publications as soon as duplicates can be obtained.

For both convenience and efficiency the catalogue of over 4,500 cards has been separated systematically into numerous small groups, each of which contains species of generally similar characteristics. In the case of dicotyledonous leaves, for example, well-defined differences in shape, venation and marginal characters are the principal bases of separation into 52 distinct groups. An artificial key, with line drawings and short descriptions of each group, accompanies the catalogue. By means of the key a specimen to be identified is easily and quickly referred to a particular group. An examination of the cards of a particular group (generally not over 50 in number) shows whether or not the specimen can be identified as a previously described species.

The catalogue has demonstrated its usefulness in several ways: (1) the time required for the identification of a specimen has been reduced from the previous 6 to 8 hours by the usual haphazard methods to about 30 minutes by the use of the catalogue; (2) for age determinations each small group of cards contains relevant stratigraphic information about both identical and related species; (3) for taxonomic studies it is advantageous to have in the easily handled, compact groups of cards the figures of numerous specimens of generally similar characters, as well as the discussions of various authors regarding botanical affinities; (4) for studies of modern plants it may quickly be determined whether or not a certain type of leaf or seed is represented by similar or comparable forms in the Mesozoic or early Cenozoic.

For added efficiency it is planned to accompany the catalogue by three cross-indices: stratigraphic, systematic and alphabetic.

Financial and clerical assistance for the undertaking has been given by the department of geology of Princeton University. For their careful work the writer is indebted to Mrs. C. Tindall, Miss H. Hurley, Miss C. D. Gurnsey, Mrs. J. A. Lahey, Mr. K. M. Waagé and Mr. H. deN. Wynne.

The completed catalogue may be consulted in the department of geology, Princeton University.

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THE PEACE RESOLUTION OF SCIENTIFIC WORKERS

IN the Peace Resolution of the American Association of Scientific Workers printed in SCIENCE of May 3 much is said to which every scientist can assent.

This is notably true of the statement, "the continuance of progress now largely depends upon the scientists of the neutral nations." But then follows the sentence "American scientists can best fulfill their share of this responsibility if the United States remains at peace." Is this not a categorical conclusion based upon premises which are still in the making? Should scientists endorse *as scientists* a conclusion reached in this way, thus responding to the attempt to "crystal-

lize their attitudes toward the conflict" while all is yet in flux?

I venture to raise this question because of the plan to present the peace resolution to the President of the United States as representing the view of American scientists generally.

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ABSTRACTS OF PAPERS

A method for finding certain types of definite integrals: H. BATEMAN. The method devised by Poisson and Lerch for finding an integral $I(t)$ which exists for $R(t) > 0$ is to first calculate the Laplacian integral whose integrand is $I(t) \, exp \, (-xt) dt$. The corresponding method in which the integrand is $I(t) t^x \, dt$ is based on the theory of the Mellin inversion formula, but in using it in practice to obtain effective expressions for $I(t)$ it is advantageous to employ theorems, analogous to Laurent's theorem, for the representation of a function analytic in a strip in a series of rational functions instead of a series of powers of x. Examples of such representations are given.

Solar faculae and solar constant variations: HENRYK ARCTOWSKI (introduced by C. G. Abbot). The daily solar constant values, for the years 1926–1930, have been compared with the areas of faculae in order to search for the direct correlation between solar phenomena and the variations of solar radiation advocated by Dr. Abbot. The solar constant data have been taken from volume 5 of the Annals of the Astrophysical Observatory of the Smithsonian Institution and those of the areas of faculae from the results of measures made at the Royal Observatory, Greenwich, of photographs of the sun taken at Greenwich, at the Cape and in India. It has been found that the mean values for the days of maxima and minima of the solar constant and the five days preceding and following these days give curves similar to those of the faculae of the same dates. The mean maximum as well as the mean minimum of the solar constant variation, however, are slightly in advance of those of the faculae.

Irregularities of absorption in the galaxy: JOEL STEBBINS, C. M. HUFFER and A. E. WHITFORD. In continuation of work previously reported to the Academy the absorption in the galaxy has been derived from measured colors of stars known to be intrinsically white but which are reddened by the effect of dark material in the spaces between the stars. While in general the interstellar dust is concentrated in a thin layer near the main plane of the galaxy, much like the ham in a sandwich, there are many irregularities in its distribution. The layer is of unequal thickness in different directions, being more dense toward the center than toward the anti-center of the system, and there are numerous detached clouds of dust with clear spaces between them and the main absorbing layer. Toward the center where the absorption is greatest, a clear

region has been detected extending to 3,000 light-years from the sun, while not far away are dark clouds nearer than 1,000 light-years. However, there is small chance of penetrating through to the galactic center at 30,000 light-years. As the estimated dimensions of our own galaxy and the distances to other galaxies depend upon proper allowance for the absorption of interstellar dust, the irregularity of this absorption complicates such estimates more than has been hitherto realized.

Perceived size of the moon as a function of angle of regard: EDWIN G. BORING and ALFRED H. HOLWAY. The perceived diameter of the moon at the horizon is from one and one half to two times the perceived diameter in culmination. The usual explanation of the moon illusion is that the horizon appears more distant than the zenith, although the moon continues to subtend the same visual angle at every elevation, so that the ascending moon, appearing to approach the observer without increase in the size of its retinal image, must seem as an object to get smaller. This theory, which refers perceived size to perceived distance, provides no explanation of the variation of the perception of distance with the elevation of the observed object. It is known further that the illusion holds for objects more than 30 m distant, but is greatly diminished as the radius of observation is decreased below 30 m. We have shown that the perceived size of the moon decreases with its elevation from the primary position of regard. In this function the elevation of the moon is relative to the head of the observer and not to his body or to the earth. Thus for the supine observer the horizon moon is smallest and the moon in elevation largest. The perceived size diminishes when the head is kept fixed and only the eyes are elevated. It does not change when the head is tilted back so that the eyes are not moved with respect to the head. The direction of change of perceived size is reversed below the primary position. To the erect observer the moon below the horizon, if it could be visible, would appear about as much smaller, angle for angle, when compared with the horizon moon, as the moon in elevation seems smaller. The same form of function is found for the sun when two mirrored images of it are compared through dark filters. The general rule is that objects at a great distance appear largest when the eyes are in the primary position with respect to the head, irrespective of the position of the observer's head and body. No final explanation of the moon illusion can be formulated at present, but these results are more consistent with an explanation in terms of relative torsion of