tion proposed has to do with the industrial possibilities of alcohol in Australia. Although this preliminary study relates chiefly to the commercial aspect, the council's main purpose is to investigate the social and physiologic effects of alcohol, and the rules for conducting these investigations set out that reports of results "shall not be couched in terms which advocate or oppose any scientific reform or existing condition." The president of the council is Mr. I. V. Newman (botanic research department of Sydney University); Dr. Arthur (minister for health in New South Wales) is the vice-president, and Mr. E. R. Walker (lecturer on economics of the Sydney University) is the assistant director of research.

UNIVERSITY AND EDUCATIONAL NOTES

A GRANT of $1,000,000 has been given to Princeton University by the General Education Board. In making this announcement President Hibben said: "This generous gift of the General Education Board is most gratifying. It is made in recognition of the extensive capital expenditures already made by the university for the construction of buildings and developments of research work in the field of pure sciences. We were compelled to draw on the capital funds of the university for this purpose and are now able to return to our general endowment $1,000,000. By so doing we are relieved from the necessity of curtailing general university expenditures in order to put through our far-reaching program in the fundamental sciences."

ANNOUNCEMENT was made at the commencement exercises of Wellesley College of gifts to the semi-centennial fund amounting to $472,000, making the total to date $8,057,000 and leaving $943,000 to be raised to complete the $9,000,000 program. The largest single item was the conditional gift of $175,000 from Edward S. Harkness, of New York, if the college can raise $525,000 by July 1. To date $300,000 of this amount has been obtained.

PROFESSOR E. A. MILNE, of the University of Oxford, lectures on problems in astrophysics during the present summer session of the University of Michigan.

DR. HAROLD R. PHALEN, professor of mathematics and instructor in physics at St. Stephen's College, Columbia University, has been appointed dean of the college.

DR. GEORGE W. HUNTER, 3D, of the Rensselaer Polytechnic Institute, has been elected assistant professor of biology at Wesleyan University.

DR. W. STILES, F.R.S., of the University of Reading, has been appointed Mason professor of biology in the University of Birmingham.

DISCUSSION

THE NORTHERN LIGHTS OF JUNE 7, 1928

ON the night of June 7, 1928, an aurora borealis of unusual splendor was visible to observers of the Washington, D. C., region. So striking were the attendant phenomena in the skies that I have decided to place it on record, as it appeared to me and as I have recorded its phenomena in my notes.

I left the city at 10:20 P. M., arriving at Clarendon, Virginia, at 10:50. At that time the skies were exceptionally clear. The northern sky was strikingly radiant with a broad zone of whitish light similar to the sky illumination normally seen over a city. From this diffused zone of light streamers, narrow and broad, were flashing upwards in a vivid display. So vivid were these streamers that two young men sitting on a doorstep beholding the phenomenon had judged them to be some queer, restless search-light play of humans upon the northern skies. Shortly after this one of the most spectacular auroral displays I have ever seen came quickly into expression. The northern glow advanced rapidly upward from the horizon like tenuous cloud mists, soon covering the entire northern sky, and swinging somewhat more rapidly eastward than westward as it appeared. A zone of light then appeared to hang almost overhead like thin, far-away impalpable clouds catching moonlight. Eastward of my position these luminous clouds, on their outermost or southerly edges, were a decided greenish coloration bordering a broad reddish or pink zone to the northward, or to the left of the greenish luminosity as I faced the east. This reddish light reminded me of the thin pinkish light sometimes seen attending a lightning flash in the rapidly thinning clouds of a passing thunderstorm in the late afternoon. From time to time beautiful lance-like streamers and broad beams of light shot quickly upward to a point somewhat past the zenith. It appeared as if the focus of these was here, and at one time many radiated from this zenith point as it seemed, perhaps as a result of the phenomenon of optical perspective. The advance of the great auroral sheet of light was rapid, and it was but a short time until the front of the luminous zone of greenish or reddish light had reached a point somewhat south of the zenith line. The pivoting of the display appeared to be at the zenith point, but the luminous clouds swung more rapidly eastward than westward, so that the display eastward reached its highest development and glory and faded some time before the westward display, attended with the same tenuous luminosities of red and green, had reached the peak of its glory. At all times there were long, lance-like, quivering streamers at play straight to the zenith, some of them flashing from easterly and some

from northerly points, these finally appearing to flow around to each other, becoming connected at their converging ends at the zenith point. At times when beheld closely waves of light appeared to flow up these celestial streamers with the speed of lightning. It is possible that the factor of perspective may have played much part in the seeming relations of these convergences to each other, but one can only report the conditions of his visual impression from his own infinitesimal point on earth.

This magnificent auroral display lasted well after midnight, the fine, lance-like flashes playing across the northern arc of the horizon for some time after the great display and wide-spread luminosities of red and green had faded away. This auroral disturbance, as indicated by the press next day, appeared to be one of great energy and magnitude, disturbing profoundly the efficiencies of telegraph communications with all parts of the world. How little do we know of these strange celestial storms in the far, thin heavens over our planet, and what their correct interpretations should be. As we have our own little mundane electrical storms, it would seem that the cosmos, too, has its greater electrical storms, perhaps on and on *ad infinitum* with its increasing magnitudes, stirring the souls of men to wonder and admiration now and then with their infinitely far-removed and tenuous cosmic lightnings in the upper spaces. Yet glad am I that something in the universe piques me, and keeps eternally beyond my head and hand, perchance ever to remain a mystery with an eternal mastery of my prosaic, scientific moods and modes. Too often we would term of scientific worth only that which we can commercialize, but above the practical contact and outlook lies an infinite field of marvels which we can merely behold and admire for the beauty and mystery and awe afforded. It is in these experiences that the highest moral values of science reside, for the purest knowledge and inspiration of life may be awakened by such glimpses of these finer, more mysterious relationships which one's being perceives apart from any of the fortuitous, practical good or bad implications of life.

H. A. ALLARD

U. S. DEPARTMENT OF AGRICULTURE

AUTOMOBILES AND ANIMAL MORTALITY

AN automobile trip of 1,400 miles, beginning at Iowa City, Iowa, and ending at Sanford, Florida, occupied my time from October 1 to 11, 1928. In the course of this journey my wife and I kept as accurate a count as possible of the vertebrate animal casualties, presumably due to passing automobiles, found on the highway, which led through southeastern Iowa, central Illinois, southwestern Indiana, western Kentucky and Tennessee, central Georgia and north central Florida.

In making our count of these dead animals, only the freshly killed carcasses of vertebrate forms that we could identify in passing were included; and only the remains lying in or at the edge of the highway received consideration.

A greater number of bodies were observed on paved roads than on gravel or earth highways where high rates of speed are more difficult to attain. Undoubtedly speed is an important factor in the death-dealing qualities of the motor car so far as wild animals are concerned.

The greatest number of vertebrate remains encountered on any one day was ninety-two, on October 2, between Princeton and Paris, Illinois, a distance of 200 miles, all over fine concrete roads. This was the banner day for domestic fowls and English sparrows, the remains of fourteen of the former and fifteen of the latter being counted. Fourteen mammals, including representatives of at least eight species, also were added to our list on this day.

The preponderance of creeping and crawling things was particularly marked, for they head the list with a total of eighty-one; of these "snakes" make up 67.9 per cent. No doubt the number of casualties among the members of this group was due largely to seasonal change in temperature, for with the coming of cooler weather in early fall these animals crawl on to the paving which has been warmed by the sun and so are often crushed by passing automobiles. It follows, too, that they are most likely to meet with disaster on warm sunny days.

Of the more or less unusual forms met with under the circumstances here outlined may be mentioned the two opossums, one each for Iowa and Kentucky, the pocket gopher, one for Illinois, and the rattlesnake, one for north Georgia.

On comparing the list of species of dead animals observed on this tour with those noted on a 635-mile drive made by us over Iowa roads in June and July, 1924 (SCIENCE, 61, No. 1568, 56–57, 1925) some degree of similarity in the assemblage of forms represented is at once apparent even though the two trips were taken at different seasons of the year as well as through different life zones. This suggests that different types of vertebrates are more likely to meet with disaster than others. Something of seasonal and local faunistic development is also suggested, for, while birds in general and the red-headed woodpecker in particular headed the Iowa list in spring and summer, snakes and turtles made up a goodly bulk of the casualties on our early autumn journey. As might be expected, Florida heads the