search associates and visitors at the bureau. It is desired to keep it up to date and make it as complete as possible. Authors who have reprints available can very effectively assist in the dissemination of information by contributing copies to this collection, since by consulting it workers on a given subject can find together in one place the pertinent literature, the discovery of which would otherwise require diligent and laborious search through many scattered journals on physics, chemistry, psychology, physiology and sundry kinds of technology.

IRWIN G. PRIEST

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NO METEORITE

ON November 12, 1927, newspapers in the Eastern States carried a New York *World* News Service statement that on November 11 a meteor, accompanied by a bolt of lightning, struck at Fairdale, near Montrose, Susquehanna County, Pennsylvania. The lightning set fire to a building and the meteor made holes 12 to 14 inches in diameter in the concrete highway. Of particular interest was the statement that around these holes in the highway was discovered a strange substance that very much resembled bituminous coal.

The Pennsylvania Geological Survey made inquiry through different channels and received a most satisfactory reply and explanation from H. R. Moffitt, district engineer, Pennsylvania Department of Highways, at Scranton. He writes:

> Lightning struck a barn to which an aerial was attached, running thence to the house and down the ground wire and was apparently conducted through the water that covered the ground at this location, to the pavement. The pavement in several places was shattered along the edge about 10 inches in from the edge and about three inches deep, where the concrete was broken out exposing the reinforcing. The total breaks can be repaired with about one gallon of tar and one hundred pounds of stone. The asphalt crack filler, in several places, was blown out and burned and the material resembled soft coal, which I believe gave rise to the newspaper account of the story.

This note is published so that future catalogs of meteorites will not include this one from Fairdale, Pennsylvania.

R. W. STONE

HARRISBURG, PA.

CONSIDER THE USER OF BULLETINS

IN SCIENCE of December 9, Professor R. J. Barnet, under this cleverly worded title, has given some very good advice to those who control the make-up of bulletins. But he might very justifiably have gone further. Those of us who have to consult the technical and non-technical bulletins of the federal government, of the States and of other institutions, often find fault; and as to the librarians, those long-suffering people deserve our very deep sympathy.

Professor Barnet seems especially annoyed by the difficulty he has had in finding the names of the authors of certain American bulletins, and urges very sensibly that these names be displayed uniformly on the cover page or the title page. My first reaction was the reflection: "Well, after all, we do better than the British." I had in mind especially some of the publications of the Board of Agriculture and Fisheries, the authorship of which I have seldom been able to learn. The beautifully illustrated, but anonymous No. 44 of the "Miscellaneous Publications" of this ministry, entitled "Wasps," pleased me so much that, after a very considerable effort, two years in duration, I learned that it was written by that competent entomologist, R. A. Stenton, now of the Parasite Laboratory of the Imperial Bureau of Entomology at Farnham Royal.

But we must not criticize our British friends while we ourselves are open to criticism. We do not follow the advice of our own best people. As long ago as 1919 the Association of Agricultural College Editors formulated recommendations on the very points brought out by Professor Barnet, and yet they have not been followed by all.

Professor Barnet might have pointed out other things. I have been talking them over with Miss Mabel Colcord, the skilled librarian and bibliographer of this bureau, and from our somewhat different viewpoints we have sympathized about several of these other things. How is one to give exact references with the minimum of trouble when such magazines as *The Scientific American* and *The Scientific Monthly* conceal volume and number in their advertising pages? What is one to do about a repaged reprint (See R. H. Rastall, *Nature*, March 20, 1926, page 418)? Then too, why should scientific men from time to time, as they do, send out reprints or preprints carrying only author's name and the title of the article, with no date and no indication of what it is taken from? Why should the division reports from the various British colonies fail to state the country they represent? Why, in bibliographic lists, should translated titles be given without also the title in the language and the wording of the author? In simple justice to the author, it seems that it should be given as he states it. *The Experiment Station Record* of this department fails in this respect. There are other questions of this kind. They have been discussed, most of them, elsewhere and at various times.

I wish to add one last word, on the desirability of printing the name of the author of the species following the scientific plant or animal name. I labored for years to secure this obviously just custom with one important bibliographical publication before the publishers were convinced of its importance.

L. O. HOWARD

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SCIENTIFIC BOOKS

Stars and Atoms: A. S. EDDINGTON, Sc.D., F.R.S., Plumian Professor of Astronomy in the University of Cambridge. New Haven: Yale University Press. London: Oxford University Press. pp. 127.

IN "Stars and Atoms" Professor Eddington has given us one of the most valuable and delightful monographs on astronomy that has ever appeared in the literature of science.

The rapid strides of physics and chemistry into the realms of the stars have fairly bewildered students of the older astronomy, and it is a remarkable service which the author has rendered in giving to the general reader, without mathematical details, the essential problems of modern astrophysics. With a sufficiently extensive description of the atom and its ionization that will enable the general reader to picture the mechanism of radiation and radiative temperature, the author portrays the essential make-up of the sun and stars and makes clear the problem of the maintenance of their heat.

When one reads the all too often dogmatic statements concerning recent advances in astronomy, one feels refreshed in finding so great an authority as Dr. Eddington sounding notes of caution while making sharp distinctions between the demonstrable and the speculative.

The saving sense of humor which relieves the dilemma in many an embarrassing scientific situation keeps the reader in friendly terms with the scientist, even in his wildest guesses and in the end fosters a genuine faith and confidence in results of notable significance.

In few books, indeed, does one sense more acutely the true spirit of science in its never-ending quest for divining the nature of things. From the first chapter to the last the reader is carried at almost breathless pace through round after round of astrophysical discovery till he is introduced to matter in all but unbelievable states as it exists in the companion to Sirius.

In his final chapter on stellar evolution, Dr. Eddington makes a strong argument for the annihilation of matter through the radiation of mass, but does not overlook such technical details and perplexities as the simultaneous existence of giant and dwarf stars in coeval clusters, the problem of devising laws for the release of subatomic energy consistent with the demands of astronomical observations and at the same time reconcilable with any satisfactory picture of the annihilation of matter which the student of subatomic activity can postulate.

A lesser scholar than Eddington would not have closed the book with an anticlimax. It is a mark of genius and modesty worthy of a successor to the traditions of Newton that his closing paragraph should read:

> I should like to have closed these lectures by leading up to some great climax. But perhaps it is more in accordance with the conditions of scientific progress that they should fizzle out with a glimpse of the obscurity which marks the frontiers of knowledge I do not apologize for the lameness of the conclusion, for it is not a conclusion. I wish that I could feel confident that it is even a beginning.

H. T. STETSON

SPECIAL ARTICLES

THE CORRELATION BETWEEN INTELLIGENCE AND SPEED IN CONDUCTION OF THE NERVE IMPULSE IN A REFLEX ARC

THE present paper is a preliminary report of a study to determine if there is any relationship between the factors of intelligence and reflex time or speed in conduction of the nerve impulse in a reflex arc.

My work of the last three years as a fellow of the National Research Council has centered around an investigation of the neural processes in stuttering, and there has developed out of this research a refined technique for utilizing action current measurements in functional neuromuscular derangements. In studying certain reflexes during stuttering among patients widely different in intelligence an apparent relationship between reflex time and intelligence or mental ability was noted. These observations were verified on the patellar tendon reflex. Nearly all the excellent work that has been done on this reflex has involved so-called gross reflex time or the time elapsing between the application of the stimulus and the movement of the foot or thickening of the muscle. This gross reflex time probably would not correlate very highly with such mental factors as we wish to study because nine tenths of the time is taken up by movement of the muscles in extending the foot and any factor affecting the central nervous mechanism