tion of inclusions in sloping and rolling country may have been similarly effected without leaving distinguishable traces. It is the failure to recognize these important considerations that has led in many cases to the confident and regrettable announcements on the part of students respecting the original association of human remains with the remains of fossil animals of the earlier periods.

It is not the Vero evidence, however, which requires particular attention at this time, since the interpretations favoring great antiquity are fully offset by the interpretations of anthropologists of long experience in the consideration of problems of the history of man in the world and the evidence relating thereto, but because questions of wide range have been opened through the revamping by Dr. Hay of a large body of so-called evidence of geological antiquity which has long been discredited and relegated to the historic scrap heap where it should still remain.[1]

There is a peculiar and very strong fascination in the idea of hoary antiquity and on the part of many students a disposition to discover parallels between the early events of human history in the old and new worlds, and the gathering of data bearing on these ideas becomes an obsession. Had certain of our archeologists in past decades not met with strenuous opposition glacial man in America would long ago have been fully "established." We should now have in our museums large collections of American paleolithic implements duplicating in nearly every respect the paleoliths of Europe and no end of bones of Pleistocene man and if now such views as those of Dr. Hay are allowed to prevail we shall have to accept the conclusion that American man had advanced to the pottery-making stage in the middle or early Pleistocene, and that after the lapse of a vast period the art was revived by the same or another people using the same materials, employing similar methods and attaining identical results in the same region—a marvel without parallel in the history of man.

[1] *American Anthropologist* (N. S.), Vol. 20, No. 1.

It is manifestly a serious duty of the archeologist and the historian of man to continue to challenge every reported discovery suggesting the great geological antiquity of the race in America and to expose the dangerous ventures of little experienced or biased students in a field which they have not made fully their own.

Dr. Hay has published a map giving locations of finds of traces of man attributed to the Pleistocene, these in cases being associated more or less intimately with remains of *Elephas imperator*. But this association is open to different interpretations and I feel justified in raising the danger signal in each and every case since, if left alone, lamentable errors may become fixtures on the pages of history. I therefore hasten to relabel the map "Danger Signals for the Student of Human History."

I do not wish for a moment to stand in the way of legitimate conclusions in this or any other field of research, but illegitimate determinations have been insinuating themselves into the sacred confines of science and history with such frequency and persistence that no apology is required for these words of caution.

W. H. Holmes

Department of Anthropology,
U. S. National Museum

NOTE ON SUDAN III

The toxicity of this dye, used so extensively in the study of problems connected with fat metabolism and vital staining, is a question of considerable importance; on this account a preliminary notice is presented of the finding that the preparations now on the market are of very doubtful purity.

Mendel and Daniels once stated that large doses of this dye fed to cats were harmless, provided the dye was pure. A preparation put up by an American manufacturer was given by them in large doses to two cats, which subsequently died within a comparatively short time, apparently from the effect of some impurity in the dye.

Some years later Salant & Bengis in their pharmacological study of fat soluble dyes stated that rabbits fed 1.7 gm. per kilo died in

one to three weeks, but it was extremely doubtful whether death was due to the dye.

Experiments carried out in this laboratory with three German preparations and one of American make show great variation in general physical and chemical properties. Melting points vary by as much as 70 degrees, the color of solutions in oil range from a deep orange to a venous red, and their degree of solubility in neutral, alkaline or acid solutions is not the same.

The impure preparations were found in every case to be highly toxic, causing rabbits to die within 24 hours.

Full details of the completed experiments will be published later.

B. E. READ

YALE UNIVERSITY

SCIENTIFIC BOOKS

Lord Lister. By SIR RICKMAN J. GODLEE, Bart., pp. xix, 6761. Macmillan & Co., Ltd. London. 1917.

This is the biography of a man who never wrote a book yet whose work so profoundly transformed surgery that "Before Lister" and "After Lister" in surgical chronology are the counterparts of B.C. and A.D. in Christian chronology!

As a biography the story is too detailed to be easy perusal for the non-medical reader as compared, for example, with Vallery-Radot's "Pasteur"; but as the authorized biography by Lister's nephew and assistant, who had access to all his letters, remarkable commonplace books and other data, and as a narrative intended to trace the development of Lister's antiseptic system for the enlightenment of the profession in future ages, it is none too long nor too minute. It is more than a biography. It is an important historical document.

Joseph Lister was born a Quaker and continued in the Society of Friends until his marriage with the daughter of his professor of surgery, Mr. Syme, in 1856, when he withdrew from the society and later joined the Episcopal Church in Scotland. In his correspondence with his family, however, he always used the plain language, but in a form which differs from that of our Philadelphia Friends and often grates upon both eye and ear. He simply replaces "you" by "thee," the plural verb being retained, *e. g.*, Thee say, are, have, etc.

He witnessed the first operation ever performed in Great Britain under ether anesthesia by Liston in December, 1846. Yet as Godlee points out it was hard to displace the old slap-dash surgery which was no longer necessary when pain had been abolished. Yet even in my own student days (1860–62), I have seen stop-watches pulled out to time how many seconds were required by Gross and Pancoast to whip a stone out of the bladder.

Lister's first work was in anatomy and pathology, especially in inflammation. Few remember that it was he who in 1853 first demonstrated the circular and the radiating muscular fibers in the iris.

A visit to Edinburgh for observation changed his whole life, for he settled there first as a student, then as an extra-mural lecturer, and there found his model wife whose death in 1893 was such a terrible blow to him.

In 1860 he was appointed regius professor of surgery in Glasgow. The very next year he attributed suppuration not to the oxygen of the air as all the chemists and everybody else were teaching, but to fermentation. His first two papers introducing the antiseptic system were not published until 1867.

Sir Rickman gives an excellent account of the warfare on "hospitalism" and puerperal fever by Simpson, Erichsen and Semmelweiss, but does not even mention our own Holmes, whose finger pointed the way as early as 1843. The echoes of his battle royal with Meigs and Hodge, of Philadelphia, were still reverberating when I was pursuing my medical studies. The methods of treatment of wounds which I was taught, and which I practised during the Civil War and down to 1876, are well described. Then follows a discussion of fermentation and putrefaction, and next the history of the rise and progress of Lister's antiseptic system, its modifications and its eventual triumph.