chart published in volume 3, p. 234, of the final report of the commission. That any one should claim authorship for this discarded chart is remarkable. Certainly Dr. Jordan never has. When, after a number of years, Mr. Elliott laid claim to it, Dr. Jordan was assured by the Treasury Department that it was under no obligations to Mr. Elliott for the chart.

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STANFORD UNIVERSITY,
February 28, 1912

QUOTATIONS

LORD LISTER AND WESTMINSTER ABBEY

IT is only by reason of Lord Lister's known wish that he is not buried in Westminster Abbey. Yesterday an impressive service was held there to give expression to feelings of gratitude and thankfulness, and in memory of what he has done for mankind. Posterity does not always confirm the opinion of contemporaries as to those meriting such honor. The Abbey has its monuments of the pseudo-great, statutes of justly forgotten worthies, inscriptions pretentious if not mendacious. If there were a centennial expurgation, much might be cast out. But of this we may be assured, that it would have been matter of enduring surprise and reproach if no place had been offered in the Abbey for the great healer who has passed away. It is crowded with memories or associations of strife and enmities, and heroism displayed therein. The world does not fight every day as of old, at all events with enemies of one's own race; and so, as time goes on, if the Abbey is to continue to be the place where the nation's chief worthies repose or where it bids them farewell, it must be associated more and more with the heroes and victims of peace. He who cured where death had been certain, who brought hope where there had been despair; he who found surgery, as some thought, little more than the art of killing quickly those who would have died slowly, and who transformed it into a wellnigh miraculously beneficent agency for the relief of human suffering—he, of all others, merits such honor. We are not undervaluing the ceremony of yesterday—one of the most impressive ever held in the Abbey; one in which every one present was a sincere mourner—in saying that there will be many unseen and nameless tributes of gratitude which Lord Lister would have valued even more. In every hospital, the world over, must be some who, the subjects of operations successfully conducted by reason of his methods, will, on the news of his death, think of him with gratitude. The victories of war are fleeting; they may be over in a day or an hour; and some of the greatest of them are local in their effects. But those of the healing art, such as were due to Lister, are renewed everywhere and for all time.

There exists no means of measuring, even approximately, the amount of pain and suffering in the world at any given time. We can not doubt that it varies from age to age; and there is no certainty that it decreases with the growing complexity of our every-day life. While some primitive sources of suffering, such as famine, pestilence and war, may diminish, others may increase. The hurry and tear and wear incident to our civilization make more calls upon the nerves; they are always on the stretch; and it is not improbable that we are more susceptible to pain than were our rude ancestors. It is the drawback of so many discoveries and inventions that they take away from us almost as much as they give; they create unrest and multiply needs; they spread the limited capacity for pleasure over many objects, to the impairment in the end, it may be, of the total amount of enjoyment; and the greatest marvels of ingenuity may leave us no richer in essentials than before. The inventor who robs us of nothing, whose gifts are all pure gain, is the healer who has found secrets before unknown. In life the presence of pain is the mystery of mysteries. The moralist offers us his feeble explanations, and tells us that without sacrifice no permanent satisfaction or truly good results can be attained; that, to use a common and unconvincing expression, it is a masterful and wholesome discipline; that, to cite the words of one who in all sin-

cerity expounded this unsatisfying solution, by pain we are "driven ever onwards." Such consolations have stifled few cries or groans. The fact borne in upon all who were familiar with surgery in the pre-Lister days was that there was so much suffering to all appearance sheer waste; a heavy price was paid and nothing was gained; the way through discomfort and distress lay to more of both. And so we all instinctively place masters of the healing art, certainly those who have found new remedies and effective methods, among the great benefactors of men. They, and almost they alone, among inventors and discoverers have given much and taken from us nothing.

One further reflection must have been present to many in the Abbey yesterday. Lord Lister's discoveries and methods have opened up possibilities of still further advances, scarcely dreamed of before. The surgeon whom our ancestors regarded as the most highly paid of executioners is seen to be the possessor of an art the future of which is limitless. Lister and his coadjutors have shown what are the enemies to be guarded against and how they are to be encountered. He has opened a way which will be pursued, it may be confidently expected, with signal results. To use the words of the anthem yesterday, "His body is buried in peace, but his name liveth for evermore"; chiefly, no doubt, for his beneficent discoveries, but partly also by reason of the memory of his character, for all time the type of the faithful servant of science. Good as well as great, modest, genial, zealous in the interest of his patients, seeking truth unweariedly and calmly, he will, we do not doubt, be the model and example of men who will carry the art of healing far beyond the point which it has to-day reached.—The London *Times*.

SCIENTIFIC BOOKS

The Chemistry of the Radio-Elements. By FREDERICK SODDY. Longmans, Green and Co. 1911. Pp. 92.

There is probably no branch of modern science which has offered so great an attraction to the casual student as the subject of radioactivity, and there is certainly none which has afforded a more unrestricted field to the ambitious author who, with but little first-hand information, has been eager to popularize the views of others or to support enthusiastically unsound doctrines based on a wholly insufficient knowledge of the fundamental principles or the value of experimental evidence. It is a pleasure therefore to be able to welcome the appearance of Mr. Soddy's book, written as it is by one who possesses so wide a knowledge of the topics treated and who has played so important and prominent a part in the development of the subject of radioactivity.

The book begins with a brief statement of the scope and objects of radio-chemistry. This is followed by a general discussion of the phenomena of radioactivity, the first discovery by Becquerel of the emission of characteristic radiations by uranium compounds, the general properties of these radiations, and the extension of our knowledge which resulted from the pioneer work of Madame and Monsieur Curie. To the novice in the subject, the text at this point is likely to lead to a somewhat exaggerated notion of the part played by the Curies in the development of the general theory, but difficulties of this sort are apt to arise in any attempt at a condensed treatment of so complex a subject, and the author has succeeded in preparing a distinctly instructive outline in which the more important facts are presented in a clear and orderly fashion. The characteristic differences in the relative permanence or stability of the different radio-elements are mentioned, the production by certain of these of gaseous radioactive elements or emanations is described, and the properties of the emanations themselves are briefly considered. Then follows a discussion of the interesting experiments on the radioactivity of thorium salts, which led to the formulation of the disintegration theory, and an outline is given of this theory in its more important phases.

The next topic treated is the general nature of the three types of radiation, the alpha, the beta and the gamma rays. The characteristic