mind that plays so prominent a *rôle* in the science of this century. Beginning his career as a physiologist, he soon saw in the pursuit of his specialty the opportunity of bridging over the gap between body and mind, or, better, of restoring to its original unity the study of the two as different aspects of one phenomenon. The field of physiological psychology had been simply touched upon here and there. It lacked systematic treatment as well as recognition as a distinct science. Both of these he attempted to supply; and the attempt, considering the inherent difficulty of the subject, has been eminently successful. He published the first systematic text-book in this field in 1874, a second and much enlarged edition appeared in 1880, and the third has just appeared. In these thirteen years the growth of the science has been rapid, and the fact that the validity of this increase is in great part not yet tested makes it necessary to record much that our successors will be able to omit. But independently of this technical aspect of the study, science owes a debt to this movement similar to that it owes to Darwin. The one introduced the same rejuvenating ferment into the discussion of philosophical problems as has the other into that of biological problems. It has given meaning to facts formerly isolated and uninterpreted, has erected a sign-post directing the way for the future, and has prevented much useless and irrelevant speculation. It is to be hoped that the objects and methods of this science are to-day too well known to need more than a mention in this connection.

The question of most natural interest in the notice of this text-book is the extent and nature of the changes that have been made in passing from the second to the third edition. While the author has made alterations in all parts of the work, the topics that have been most altered are the following, and they indicate very well the fields in which recent research has been active. The anatomy and physiology of the central nervous system, and particularly of the parts connected with the highest psychic activities, have been much revised. Next, the experimental study of sensation, both qualitatively and quantitatively, has received valuable additions from many hands. The chapter on auditory perceptions has been rewritten, and that describing the measurement of the times of psychic processes has been made to include the most recent studies, especially those made in Professor Wundt's own laboratory. Whether these changes justify the publication of a new edition is a question upon which opinions will differ. A great deal of what has been added has been already published in the *Philosophische Studien*, edited by Professor Wundt; and, as most of this material is only of technical interest, its incorporation into a text-book is hardly an advisable step. Again, the advance in the knowledge of facts has brought with it an advance in the presentation of theoretical views, and Professor Wundt has hardly undertaken the radical kind of revision that the appreciation of these would justify: in other words, if a text-book in physics were written upon the plan of this work, it would amount to a cyclopædia, and the reader of that cyclopædia would be at a loss to distinguish the important and clearly established from the unessential and provisional. The book has grown thicker where it should have grown deeper. Finally, at the risk of singling out a trivial matter, an American reader is very much struck with the absence of all mention of the studies that have been contributed to this science on this side of the Atlantic within the last few years. These studies to a large extent fall in those chapters that have been most fully revised; and this, together with the fact that they have been noticed in Professor Ladd's 'Psychology,' makes the cause of this omission all the more strange.

Spezial Karte von Afrika. Gotha, Justus Perthes. f°.

THE second edition of this valuable work on African geography is now complete. It consists of ten sheets, and contains all the new discoveries made during the last years. The coloring of the new edition is more delicate than that of the first edition, and the political boundaries have been indicated in colors that do not obscure the physical features of the country. The map is carefully compiled from all the available material, and is indispensable to the student of African geography. Although it is only a year since the first edition was completed, the additions to our knowledge of some parts of Africa are so considerable that the sheets had to be practically redrawn. On the sheet Kongo we find the results of Capello and Ivens's journey, Reichard's journeys west of the Tanganyika, and the numerous explorations on the tributaries of the Kongo. The contour line of 1,000 metres, which was indicated by a heavy buff line in the first edition, has been corrected according to recent observations, and is shown by a broken red line. Another technical improvement of the new edition is the use of a dark green color for indicating oases. On the sheet Western Sudan we find A. Krause's important journey through Mosi indicated, although the details are not yet known. The leading principles in constructing the map are thoroughly scientific. The lettering and the outlines show plainly the parts that are known by exploration, and those which are only known by reports of natives. The scale is 1:4,000,000 (about 60 miles to an inch), large enough to show all important features of the geography of Africa.

The Driftless Area of the Upper Mississippi. By T. C. CHAMBERLIN and R. D. SALISBURY. (A monograph accompanying the Sixth Annual Report of the Director of the United States Geological Survey.) Washington, Government. 4°.

IN no direction is the Geological Survey advancing the science more rapidly than in the department of glaciology. The monograph on the great terminal moraine has done more than any other single research to make the continental ice-cap a reality, and to silence the iceberg theory of the drift; and the present contribution is scarcely less valuable or wide-reaching in its conclusions.

In the midst of the great mantle of drift that overspreads the Upper Mississippi basin, there lies a drift-barren tract of about ten thousand square miles, — the driftless area of Wisconsin and adjoining States. This island in the sea of drift is unique; and, strangely enough, the margin of the drift on almost every hand lies on a slope descending toward the driftless area. Probably no other district on the globe is so favorably situated to serve as a standard of comparison and contrast between glaciated and unglaciated areas, and a means of estimating the results of the drift agencies. All of the formations of that region, with their attendant topographies, sweep curvingly across the driftless area from an ice-ridden region on the one hand, to a like ice-ridden region on the other, displaying in a most striking manner the contrasts that arose from the single factor of glaciation. The driftless region is especially instructive concerning glacial extension and restriction, and it throws important light upon the movements of the ice-sheet over a very large adjacent territory. The great drift-burdened ice-stream, as it moved south-westward from the Canadian heights, was divided and diverted; and the separated currents swept around the area, and mingled their burdens below it.

The facts bearing upon these and many minor aspects of the driftless area are marshalled and discussed in a masterly manner, the more important features being also clearly exhibited in a series of well-executed maps and cuts. Among the subordinate contrasts which this region presents, none are more noticeable than the absence of falls in the driftless area, and their comparative abundance beyond its limits, — falls indicating a youthful, and usually a post-glacial, topography. And certainly there could be no more convincing evidence that the region has never been invaded by glaciers than is to be found in the fragile pinnacles of rock which abound over a large part of its surface.

The residuary earths of the driftless area are compared physically, microscopically, and chemically with the glacial clay or till. Nearly one million measurements of the ultimate particles show that the residuary earths are much finer grained and more homogeneous than the drift clay; and they are also remarkably free from calcareous matter, which forms a large proportion of all the true drift of that region.

In its remarkably sinuous course across the continent, the great terminal moraine impinges upon the eastern side of the driftless area, and affords specially fine contrasts between the characteristics of driftless and drift-bearing regions; while upon the west it is bordered by the loess; and the much-disputed question as to the origin of this interesting formation is settled provisionally in favor of its being essentially an aqueous or lacustrine deposit of glacial clays.

In the concluding chapter, on the history and genesis of the drift-