criticism against the proof of theorem 19 in the first paper is invalid; the proof as it stands is accurate and complete. Professor Veblen believes also that it is legitimate to use the symbol $\{ABC\}$ in the two ways employed, the language in the one case (as in theorem 7) being essentially an abbreviation of that in the other case (as in assumption II).

<div align="right">R. D. CARMICHAEL.</div>

NOTES.

AT the November meeting of the Edinburgh Mathematical Society the following papers were presented: By G. N. WATSON: "The convergence of the series in Mathieu's functions"; by D. M. Y. SOMMERVILLE: "Taylor's cubics associated with a triangle in non-euclidean geometry"; by E. L. INCE: "The elliptic cylinder functions of the second kind."

THE annual meeting of the London mathematical society was held November 17, and the following officers elected for the year: president, Sir J. LARMOR; secretaries, J. H. GRACE, T. J. I'A BROMWICH; treasurer, A. E. WESTERN. Professor A. E. H. LOVE delivered an address on "Research in mathematics." Arrangements were made to hold regular monthly meetings during the year. The society now numbers more than three hundred members.

THE summer meeting of the Deutsche Mathematiker-Vereinigung, which was to have been held in September in affiliation with the Hanover meeting of the German naturalists and physicians, was omitted. No provision has been announced for the next meeting.

CONTRARY to the announcements made in the newspapers, nearly all the European universities and technical schools are open as usual. American students provided with passports are welcome.

THE sixty-sixth meeting of the American association for the advancement of science was held in Philadelphia during the week beginning December 28, under the presidency of Dr. C. W. ELIOT.

At the meeting of Section A, the retiring vice-president, Dr. FRANK SCHLESINGER, presented his address on "The object of astronomical and mathematical research." Professor H. S. WHITE is vice-president, and Professor F. R. MOULTON secretary of Section A.

A REGULAR meeting of the National academy of sciences was held at Chicago, December 7, 8, 9; the following papers in mathematics were presented at this meeting: By G. A. BLISS, "A generalization of a theorem of Gauss concerning geodesic triangles"; by L. E. DICKSON, "Recent progress in the theories of modular and formal invariants"; by G. A. MILLER, "The ϕ-subgroup of a group of finite order"; by E. H. MOORE, "On the integration by successive approximations of the ordinary differential equation of the first order in general analysis"; by F. R. MOULTON, "An extension of the process of successive approximation for the solution of differential equations"; by H. S. WHITE, "The synthesis of triad systems Δ_t in t elements, in particular for $t = 31$"; by E. J. WILCZYNSKI, "Conjugate systems of space curves with equal Laplace-Darboux invariants."

THE royal gold medal of the Royal Society of London has been awarded to Professor E. W. BROWN, of Yale University, in recognition of his investigations in mathematical astronomy.

THE technical school of Zürich has conferred its honorary doctorate on Professor H. A. SCHWARZ, of the University of Berlin, on the fiftieth anniversary of his receiving the doctor's degree.

PROFESSOR P. KOEBE, of the University of Leipzig, has accepted a professorship of mathematics at the University of Jena, as successor to Professor J. THOMAE.

DR. W. DEIMEL, of the technical school in Munich, was killed in battle October 23, at the age of 28 years.

AT the University of Illinois, Mr. N. C. GAINES has been appointed instructor in mathematics; Mr. W. H. WILSON and Mr. R. H. MARSHALL have been appointed assistants in mathematics.

ON his seventieth birthday, August 25, 1914, the Teachers' association of South Africa presented to Dr. THOMAS MUIR an illuminated address and a gift of books.

PROFESSOR FREDERICK ANDEREGG, of Oberlin College, has returned from a year's leave of absence.

MR. W. E. EDINGTON, of the University of Colorado, has been appointed professor of mathematics in the University of New Mexico.

AT Pennsylvania State College, Dr. E. R. SMITH has been promoted from an assistant professorship to an associate professorship of mathematics.

AT the University of Texas, Dr. D. F. BARROW has been appointed instructor in applied mathematics, and Mr. F. A. LAMOTTE instructor in pure mathematics.

PROFESSOR R. G. D. RICHARDSON, of Brown University, has been elected a member of the section of mathematics and astronomy of the American academy of arts and sciences.

AT Oberlin College, Miss M. E. WELLS has been appointed acting associate professor of mathematics.

PROFESSOR G. B. GUCCIA, of the University of Palermo, founder of the *Rendiconti del Circolo matematico di Palermo*, died October 29, 1914, at the age of 59 years.

PROFESSOR R. LEHMANN-FILHÉS, of the University of Berlin, died June 5, at the age of 60 years.

THE death is reported of Professor HEINRICH BURKHARDT, of the technical school of Munich, in his fifty-fourth year.