

where C_1, C_2, \dots denote the coefficients of the form γ_u ; C'_1, C'_2, \dots the coefficients of γ'_u ; while W_r and W'_s denote distinct products of powers of the variables w_1, w_2, \dots . Naturally, we do not enter here upon the proof* that δ_v has the properties 1, 2 of the greatest common divisor.

The quantities of $[G]$ are called "ideal quantities" of $[\Gamma]$, although some of them already occur in $[\Gamma]$. That the ideals here admit of addition as well as multiplication is a pleasing feature of König's theory not found in Dedekind's theory of ideals, nor in Kronecker's exposition. Ideals of the König type appear in Weber's treatment (Algebra, volume 2) of the more special theory of algebraic numbers.

L. E. DICKSON.

THE UNIVERSITY OF CHICAGO.

CORRECTION.

PROFESSOR Wilczynski has kindly called my attention to the following misstatements in my review of his Projective Differential Geometry (BULLETIN, pages 190-194).

P. 191. The second member of the expression for $\theta_{3,1}$ should be completed by adding $-27P_2\theta_3^2$.

P. 191, line 5 from bottom. Strike out first sentence and substitute "The osculating cubic may hyperosculate C_y ."

P. 191. For last clause read: "If $\theta_{3,1} = 0$, then C_y is a curve of coincidence points."

P. 193, line 6. For θ_4 read θ_5 .

P. 193, line 6 from bottom. For "second" read "same."

P. 193, line 2 from bottom. After "range" insert "in certain cases."

VIRGIL SNYDER.

NOTES.

At the meeting of the London mathematical society held on February 14, the following papers were read: By G. A. MILLER, "Groups defined by the order of the generators and the order of their commutator"; by T. STUART, "On the reduction of the factorization of binary septans and octans to the

* König, p. 479. Misprints in the accents occur in the formula at the middle of this page; while at the top of p. 474, β_u should read β_v .

solution of a Pellian"; by E. W. HOBSON, "On the repeated integrals"; by W. BURNSIDE, "The construction of the line drawn through a given point to meet two given lines."

THE Rochester section of the association of teachers of mathematics in the middle states and Maryland was organized February 23, 1907, at the University of Rochester. After addresses by President R. Rhees, Professor D. E. Smith, Mr. A. H. Wilcox and Mr. H. S. West, the following papers were read: By Professor A. S. GALE, "The literature of secondary mathematics"; by Mr. W. BETZ, "Recent tendencies and open questions in the teaching of elementary geometry"; by Professor H. D. MINCHIN, "How the study of physics helps the teacher of mathematics."

THE fourth international congress of mathematicians will be held at Rome from April 6 to 11, 1908. The present plan is to emphasize the encyclopedic side of the science, to summarize the results already accomplished and to define sharply the great problems still unsolved. A series of formal addresses has been provided for, in addition to papers of less general interest. The following have consented to present addresses before the joint sessions of all the sections: Professors G. DARBOUX, A. R. FORSYTH, D. HILBERT, F. KLEIN, H. A. LORENTZ, G. MITTAG-LEFFLER, S. NEWCOMB, E. PICARD, H. POINCARÉ. For the more technical papers, the congress will be divided into four sections: (1) arithmetic, algebra and analysis, (2) geometry, (3) mechanics, mathematical physics, various applications of mathematics, (4) philosophical, historical and didactic questions.

A NEW mathematical review, the *Gazeto Matematika Internacia*, is projected, to be published in Esperanto. The *Gazeto* is not intended to compete with existing journals, but aims rather to establish a closer relation among them. It will publish articles on pure and applied mathematics, mechanics, theoretical physics, pedagogy, problems, book reviews, biographies, etc. The price is fixed for the present at \$2.40 per annum, and the first volume will contain about 192 pages. All correspondence should be addressed to F. J. Vaes, Mathenesserlaan 290, Rotterdam.

PROFESSOR C. ALASIA, mathematical editor of the *Rivista di Fisica e Matematica*, will review in that journal all new publications sent to him at Ozieri, Italy.

The following university courses in mathematics are announced for the summer semester of 1907 :

UNIVERSITY OF INNSBRUCK. — By Professor K. TUMLIRZ : Mechanics, II, four hours ; Capillarity, two hours ; Seminar, two hours. — By Professor J. GMEINER : Algebra, II, four hours ; Double integrals, four hours ; Seminar, two hours. — By Professor K. ZINDLER : Differential equations, four hours ; Seminar, two hours. — By Professor J. MENGER : Projective geometry, II, four hours.

UNIVERSITY OF JENA. — By Professor R. HAUSSNER : Differential calculus, five hours ; Proseminar on plane analytic geometry, two hours ; Seminar, one hour ; Selected chapters of geometry, two hours ; Differential geometry, four hours. — By Professor J. THOMAE : Plane analytic geometry, four hours ; Map-drawing, two hours. — By Professor G. FREGE : Theory of forces and the Newtonian law, four hours.

UNIVERSITY OF MUNICH. — By Professor F. LINDEMANN : Theory of elliptic functions, five hours ; Theory of algebraic forms, four hours ; Seminar, two hours. — By Professor A. VOSS : Introduction to the theory of partial differential equations, four hours ; Algebra, II, four hours ; Seminar, two hours. — By Professor A. PRINGSHEIM : Integral calculus, five hours ; with geometric applications, two hours. — By Professor A. SOMMERFELD : Theory of radiation, three hours ; Foundations of thermodynamics, two hours ; Seminar, two hours. — By Professor K. DOEHLEMANN : Descriptive geometry, II, three hours ; with exercises, two hours ; Geometric mechanics, three hours ; with exercises, one hour. — By Professor E. v. WEBER : Analytic geometry of space, four hours ; with exercises, two hours ; Differential calculus, four hours ; with exercises, two hours. — By Dr. F. HARTOGS : Elementary geometry of two and three dimensions, three hours. — By Dr. O. PERRON : Analytic theory of numbers, four hours.

THE detailed scheme which embodies the resolutions passed by the senate of the University of Cambridge last year (BULLETIN, volume 13, page 203) has been finally adopted (February 2, 1907) by a vote of about 780 to 640. The new regulations come into force in 1910. The first senior wrangler was announced in 1747, and the last one will be recorded in the summer of 1909.

THE Adams prize has been awarded to Professor E. W. BROWN, for his essay on "The irregularities in the moon's motion due to the direct action of the planets." This prize was founded about sixty years ago to commemorate the work of J. C. Adams in connection with the discovery of Neptune. It is offered every two years for competition on a set subject and is open to anyone who has at any time taken a degree in the University of Cambridge. Among former prize winners are J. C. Maxwell, E. J. Routh, J. J. Thomson and J. H. Poynting. An award has been made on an average only about once in six years.

PROFESSOR M. D'OCAGNE, of the Ecole des Ponts et Chaussées, of Paris, will deliver during the months of March and April a course of lectures at the University of Paris on graphic calculus and nomography. In the latter part of the course he will give a complete account of his own methods in the subject.

AT the close of the present academic year Professor ULISSE DINI will have completed the fortieth year of his professorship at the University of Pisa. To mark the occasion, the faculty of sciences of the university proposes the presentation of a suitable memorial. Subscriptions to the fund should be sent to Professor Onorato Nicoletti, via S. Martino 3, Pisa, Italy.

PROFESSOR E. LAMPE, of the technical school at Charlottenburg, has been decorated with the order of the red eagle of the third class. Professor T. REYE, of the University of Strassburg, has received the order of the crown of the second class.

Mr. W. H. JACKSON, lecturer in mathematics at the University of Manchester, England, has been appointed associate professor of mathematics at Haverford College, Pennsylvania.

AT the College of the City of New York, Dr. COHEN has been promoted to an instructorship in mathematics, and Mr. G. H. HAYES has been appointed tutor in mathematics.

AT the University of Washington five teaching fellowships in mathematics have been established, with a compensation of of \$400 to \$500.

THE deaths are announced of F. P. H. STIRLING, professor of mathematics in the Christian College at Madras, and J. RAJEWSKI, associate professor of mathematics at Lemberg.