and must agree to observe the rules established for the management of the reading-room.

6. In accordance with a legal statute, a library fee, payable in advance, is collected from every member at the beginning of each semester. For ordinary members, to each of whom a private drawer in the reading-room may be assigned, the fee is five marks, and for other members it is three marks. In addition, there is a deposit of three marks required from each member receiving a key, and returnable upon the surrender of the key.

7. The collection of these fees and the maintenance of order in the reading-room are in charge of the librarian, under the supervision of the directors. Members are required to obey his instructions. Further regulations will be announced by means of notices in the reading-room.

The directors of the seminary of mathematics and physics:
RIECKE, SCHERING, VOIGT, KLEIN, SCHUR, WEBER.

NOTES.

A REGULAR meeting of the NEW YORK MATHEMATICAL SOCIETY was held Saturday afternoon, November 4, at half-past three o'clock, the president, Dr. McClintock, in the chair. Mr. Isaac Hodges Turrell of Cincinnati, Ohio, having been duly nominated, and being recommended by the council, was elected a member. Professor Fletcher Durell read a paper entitled "Application of the new education to the differential and integral calculus," in which he advocated the presentation of the first principles of the calculus from an almost purely geometrical point of view.   T. S. F.

THE National Academy of Sciences met in the Capitol at Albany, November 7–9. The papers presented included one by Dr. S. C. Chandler, entitled "Additional researches on the motion of the earth's pole." Dr. Chandler finds that the most recent observations obtainable (some still unpublished) confirm the law deduced by him. He showed that the two separate motions of the pole both take place from west to east. Dr. Chandler's paper was discussed by Professors Hall, Newcomb and Boss. They all expressed themselves as now favoring the truth of Dr. Chandler's law of variations. Professor C. S. Hastings read a paper on "A new form of telescopic objective, as applied to the twelve-inch equatorial of the Dudley Observatory." The principal characteristics of this instrument are: first, that one of the

"ghosts" is made to coincide with the focal plane, thus rendering it harmless; and second, that the transformation from a visual to a photographic telescope is accomplished by substituting a second glass for one of the lenses of the visual combination, instead of adding a third lense. Professor Asaph Hall read a short paper on "Double stars." Professor Charles L. Doolittle (introduced by Professor Boss) communicated a paper, "Latitude determinations at the Sayre Observatory," but was unable to be present in person.

During the afternoon of November 8 the members of the Academy visited the new Dudley Observatory by invitation. The completed observatory was opened for inspection, and an address was made by Professor Simon Newcomb.   H. J.

OBERLIN COLLEGE has secured for its library the collection of mathematical books sent by B. G. Teubner, of Leipzig, to the mathematical section of the German university exhibit at the Chicago Exposition. This collection contains over 150 important modern treatises, in addition to complete sets of the *Mathematische Annalen, Zeitschrift für Mathematik und Physik,* and *Zeitschrift für mathematischen und naturwissenschaftlichen Unterricht.*

THE annual meeting of the London Mathematical Society was held on November 9. The officers and council elected for the coming year are: President, A. B. Kempe; Vice-Presidents, A. B. Basset, Prof. Elliott, Prof. Greenhill; Treasurer, J. Larmor; Secretaries, M. Jenkins, R. Tucker; other members of the Council, Lieut.-Col. J. R. Campbell, Lieut.-Col. A. J. Cunningham, A. R. Forsyth, J. W. L. Glaisher, Prof. M. J. M. Hill, E. W. Hobson, A. E. H. Love, Major MacMahon, J. J. Walker. The De Morgan medal, which had been awarded to Professor Klein, was presented, in his absence, to Professor Greenhill and Dr. Forsyth, who had been appointed to receive it for him, and who made replies in his behalf.

A REPORT from the committee appointed to receive subscriptions for the Gauss-Weber memorial at Göttingen announces that the total amount of contributions will probably reach 25,000 marks.

DR. J. H. BOYD has accepted a position as tutor in the department of mathematics at the University of Chicago.
                                                    T. S. F.

PROFESSOR G. E. FISHER and Dr. Schwatt, of the University of Pennsylvania, are preparing an English translation of H. Durège's "Elemente der Theorie der Funktionen einer

complexen veränderlichen Grösse." The translation will be
supplemented by a considerable amount of additional matter
and by the insertion of numerous exercises. B. G. Teubner,
of Leipzig, is the publisher. The book is expected next
summer. A. Z.

NEW PUBLICATIONS.

I. HIGHER MATHEMATICS.

BINDER (W.). Über Plancurven vierter Ordnung vom Geschlechte $p =$
1 und ihre typischen Formen. [Progr.] Wiener-Neustadt, 1893.
8vo. 64 pp. 1 plate.

BREIJER (H. G.). De grondvormen der krommen van de 3e klasse.
[Diss.] Amsterdam, 1893. 8vo. 8 and 72 pp.

BROECKER (H.). Die Periodicitätsmoduln der Abel'schen Integrale
erster Gattung als Functionen eines Parameters aufgefasst für den
Fall einer Riemann'schen Fläche, deren Gleichung in Bezug auf
die eine Variabele binomisch ist. Berlin, 1893. 8vo. 55 pp. 1
plate. Mk. 1.50

DEDEKIND (R.). Was sind und was sollen die Zahlen? 2te Auflage.
Braunschweig, Vieweg, 1893. 8vo. 19 and 58 pp. Mk. 1.60

FLEURY (H.). L'analyse infinitésimale sans limites ni infiniment petits.
Paris, 1893. 8vo. 40 pp. Mk. 2.00

GOURSAT (E.). Vorlesungen über die Integration der partiellen Diffe-
rentialgleichungen erster Ordnung, gehalten an der Faculté des
Sciences zu Paris, bearbeitet von C. Bourlet. Autorisirte deutsche
Ausgabe von H. Maser. Mit einem Begleitwort von S. Lie. Leip-
zig, Teubner, 1893. 8vo. 12 and 416 pp. Mk. 10.00

HARST (A. D. VAN DER). Bijdrage tot de theorie en toepassing der
kromlijnige coördinaten. [Diss.] Leiden, 1893. 4to. 10 and
55 pp.

JAHRBUCH über die Fortschritte der Mathematik, begründet von C.
Ohrtmann, herausgegeben von E. Lampe. Vol. 22 (Jahrgang
1890), 3tes Heft. Berlin, Reimer, 1893. 8vo. 68 pp. and pp. 849-
1313. Mk. 13.00

JOCHNICK (W.). Det vigtigaste af analytiska Geometrien. Stockholm,
1893. 8vo. 136 pp. Mk. 5.00

KÄSBOHRER (L.). Die linear-unabhängigen quadratischen Relationen
zwischen den zum Kurvengeschlecht $p = 8$ gehörigen Formen ϕ.
[Progr.] Nürnberg, 1893. 8vo. 43 pp.

KILLING (W). Einführung in die Grundlagen der Geometrie. Band
I. Paderborn, 1893. 8vo. 10 and 357 pp. Illustrated. Mk. 7.00

KLEIN (F.). On Riemann's theory of algebraic functions and their in-
tegrals. A supplement to the usual treatises. Translated from
the German with the author's permission by Frances Hardcastle.
London and New York Macmillan. 1893. 8vo. 76 pp. $1.40