His work is then incomplete; but this is not a criticism which I make against him. Incomplete one must indeed resign one's self to be. It is enough that he has made the philosophy of mathematics take a long step in advance, comparable to those which were due to Lobachevsky, to Riemann, to Helmholtz, and to Lie.

Since * the printing of the preceding lines, Professor Hilbert has published a new note on the same subject ("Ueber die Grundlagen der Geometrie," *Nachrichten der K. Gesellschaft der Wissenschaften zu Göttingen*, 1902, Heft 3). He seems to have made here an attempt to fill in the gaps which I have noticed above. Although this note is very concise, one sees clearly two thoughts running through it. In the first place he seeks to present the axioms of order emancipated from all dependence on projective geometry; he uses for this a theorem of Professor Jordan. Next, he reconnects the fundamental principles of geometry with the notion of a group. He comes nearer then to the point of view of Lie, but he makes an advance on the work of his predecessor, since he frees the theory of groups from all appeal to the principles of the differential calculus.

H. POINCARÉ.

ON LINEAR DIFFERENTIAL CONGRUENCES.

BY DR. SAUL EPSTEEN.

(Read before the American Mathematical Society, April 25, 1903.)

IN his note entitled "Sur des congruences différentielles linéaires," Guldberg † concludes that there exists for linear differential forms a theory which is analogous to the Galois field theory. Being unable to find anything on this subject beyond that written by Guldberg, it may be permitted me to correct him in some points and to give a brief résumé of some additional results.

* [See footnote at the beginning of this translation. Since this postscript was written, still another article by Hilbert has appeared: "Ueber die Grundlagen der Geometrie," *Math. Annalen*, vol. 56 (1902), pp. 381–422. *Tr.*]

† Guldberg, *Comptes rendus*, vol. 125 (1897), p. 489.