

The  $T_k$  and  $S_k$  tests given by Dickson, Townes, and Hall are derivable from these tests by consideration of the requirements imposed by test (d) on the  $T_k$  and  $S_k$ .

Using a small linear congruence machine developed by D. H. Lehmer, and with the kind assistance of Prof. and Mrs. Lehmer, the author checked the possible discriminants to  $10^7$ , verifying the following theorem.

**THEOREM:** *There are no discriminants with a single class in each genus,  $3315 < \Delta < 10,000,000$ .*

The largest prime necessary in this test was 79.

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## ON FINITE EXTENDING GROUPS

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In his paper *Non-associative algebras*,<sup>2</sup> A. A. Albert defined extending groups  $\mathcal{G}$  for algebras  $\mathfrak{A}$  with a unity element.<sup>3</sup> Such groups are merely finite multiplicative groups of nonsingular linear transformations on a linear space  $\mathfrak{A}$  of order  $n > 1$  over a field  $\mathfrak{F}$  defined so that all the transformations leave the unity element  $e$  of  $\mathfrak{A}$  unaltered. With respect to the basis  $(e, u_2, u_3, \dots, u_n)$  of  $\mathfrak{A}$  over  $\mathfrak{F}$  these groups are then isomorphic to finite groups  $\mathcal{G}$  of  $n$ -rowed square matrices of the form

$$G = \begin{pmatrix} 1 & 0 \\ B & M \end{pmatrix},$$

where  $M$  is an  $(n-1)$ -rowed nonsingular square matrix and  $B$  a 1 by  $n-1$  matrix.

In his paper Albert<sup>4</sup> has raised the question of the existence of such groups  $\mathcal{G}$  "such that no basis of  $\mathfrak{A}$  exists for which  $\mathcal{G}$  may be regarded as a permutation group."

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<sup>2</sup> Ann. of Math. vol. 43 (1942) pp. 685-723.

<sup>3</sup> Ibid. p. 712.

<sup>4</sup> Ibid. Footnote, p. 722.