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(*b*. Mogilev, Russia, 10 January 1875: *d*. Tel Aviv, Palestine [now Israel], 10 January 1941)

mathematics.

Schur was one of the most brilliant Jewish mathematicians active in Germany during the first third of the twentieth century. He attended the Gymnasium in Libau (now Liepaja, Latvian S.S.R.) and then the University of Berlin, where he spent most of his scientific career. From 1911 until 1916, when he returned to Berlin, he was an assistant professor at Bonn. He became full professor at berlin in 1919. Schur was forced to retire by the Nazi authorities in 1935 but was able to emigrate to Palestine in 1939. He died there of a heart ailment two years later. Schur had been a member of the Prussian Academy of Sciences before the Nazi purges. He married and had a son and daughter.

Schur's principal field was the representation theory of groups, founded a little before 1900 by his teacher Frobenius. Schur seems to have completed it shortly before World War I; but he returned to the subject after 1925, when it became important for physics. Further developed by his student Richard Brauer, it is in our time experiencing an extraordinary growth through the opening of new questions. Schur's dissertation (1901) became fundamental to the representation theory of the general linear group; in fact English mathematicians have named certain of the functions appearing in the work "S-functions" in Schur's honor. In 1905 Schur reestablished the theory. The most important tool involved is "Schur's lemma." along with the representation of groups by integral linear substitutions, Schur was also the first to study representation by linear fractional substitutions, treating this more difficult problem almost completely in two works (1904, 1907). In 1906 Schur considered the fundamental problems that appear when an algebraic number field is taken as the domain; a number appearing in this connection is now called the Schur index. His works written after 1925 include a complete description of the rational and of the continuous representations of the general linear group; the foundations of this work were in his dissertation.

A lively interchange with many colleagues led Schur to contribute important memoirs to other areas of mathematics. Some of these were published as collaborations with dual authorship were almost unheard of at that time. here we can only indicate the areas. First there was pure group theory, in which Schur adopted the surprising approach of proving without the aid of characters theorems that had previously been demonstrate only by that means. Second, he worked in the field of matrices. Third, he handled algebraic equations, sometimes proceeding to the evaluation of roots, and sometimes treating the so-called equations without affect, that is, with symmetric Galois groups. He was also the first to given examples of equations with alternating Galois groups. Fourth, he worked in number theory, notably in additive number theory; fifth in divergent series; sixth in integral equations; and lastly in function theory.

BIBLIOGRAPHY

Schur's writings are collected in *Gesammelte Abhandlungen*, A. Brauer and H. Rohrbach, ed., 3 vols. (Berlin, 1973). Moreover, two lectures have been published as *Die algebraischen Grudlagen der Darstellungstheorie der Gruppen: Zürcher vorlesungen 1936*. e. S tiefel, ed.; and *Vorlesungen über Invariantentheorie*, H. Grunsky, ed. (Berlin, 1968).

On Schur and his work, see *mathematische Zeitschrife*, **63** (1955–1956), a special issue published to commemorate Schur's eightieth birthday, with forty articles dedicated to his memory by leading mathematicians. See also Alfred Brauer, "Gedenkrede auf Issai Schur, gehalten 1960 bei der Schur-gedenkfeier an der Humboldt-Universität Berlin," in *Gesammelte Abhandlungen*, I, which contains a detailed report of Schur's life and work.

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