

GEORGE DAVID BIRKHOFF AND HIS MATHEMATICAL WORK

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The writer first saw Birkhoff in the fall of 1914. The graduate students were meeting the professors of mathematics of Harvard in Sever 20. Maxime Bôcher, with his square beard and squarer shoes, was presiding. In the back of the room, with a different beard but equal dignity, William Fogg Osgood was counseling a student. Dunham Jackson, Gabriel Green, Julian Coolidge and Charles Bouton were in the business of being helpful. The thirty-year-old Birkhoff was in the front row. He seemed tall even when seated, and a friendly smile disarmed a determined face. I had no reason to speak to him, but the impression he made upon me could not be easily forgotten.

His change from Princeton University to Harvard in 1912 was decisive. Although he later had magnificent opportunities to serve as a research professor in institutions other than Harvard he elected to remain in Cambridge for life. He had been an instructor at Wisconsin from 1907 to 1909 and had profited from his contacts with Van Vleck. As a graduate student in Chicago he had known Veblen and he continued this friendship in the halls of Princeton. Starting college in 1902 at the University of Chicago, he changed to Harvard, remained long enough to get an A.B. degree, and then hurried back to Chicago, where he finished his graduate work in 1907.

It was in 1908 that he married Margaret Elizabeth Grafius. It was clear that Birkhoff depended from the beginning to the end on her deep understanding and encouragement. Her varied talents and charm were reflected in the overflowing hospitality of their home. Their children, Garrett and Barbara (Mrs. Robert Treat Paine, Jr.) are well known to friends of Birkhoff.

Birkhoff admired Moore of Chicago, but not to the point of imitating him. He respected Bôcher no less, and did him the honor next to Poincaré of following his mathematical interests. F. R. Moulton's study of the work of Poincaré had something to do with Birkhoff's own intense reading of Poincaré. Poincaré was Birkhoff's true teacher. There is probably no mathematician alive who has explored the works of Poincaré in full unless it be Hadamard, but in the domains of analysis Birkhoff wholeheartedly took over the techniques and problems of Poincaré and carried on.

Birkhoff's loyalty to Harvard was complete and only occasionally critical. The response of the non-mathematical members of the faculty