

In memoriam Richard Goldschmidt

Redaktionelle Vorbemerkung. Der nachstehende Nekrolog erscheint gleichzeitig in SCIENCE und EXPERIENTIA, damit das universelle Heimatrecht Richard Goldschmidts zum Ausdruck bringend. Die Leser von EXPERIENTIA erinnern sich dankbar der verschiedenen genetischen Aufsätze dieses immer anregenden Geistes, dem unsere Wissenschaft grosse Impulse verdankt. M.



*Wehe jenen Weisen, die zu stark sind,
der Menge von ihrem Wissen mitzu-
teilen; sie sind ein Schatten, der zu
stark ist, die Reichfelder zu bewässern.*

*Confucius
(misinterpretiert)*

*Ihm Bachelors Schatten den zur Erin-
nerung an*

Richard Goldschmidt

20.6.59.

On April 12, 1958, RICHARD GOLDSCHMIDT was 80 years old. He was recovering from a nearly fatal illness which had struck a few weeks earlier. Letters from friends and well wishers arrived from many lands praising his achievements as a biologist, a zoologist, a geneticist, expressing amazed admiration for his continued scientific productivity, and professing warm personal feelings of affection. That birthday, quietly spent with his family, was a happy day in a period of years in which physical pain and fear that the body might force the mind into inactivity were ever present. Less than two weeks later, on April 24, the end came.

RICHARD GOLDSCHMIDT's ancestors belonged to respected families who had lived for centuries in Frankfurt am Main. He received the excellent education of the Gymnasium and at an early age decided to become a naturalist. In 1896 he entered the University of Hei-

delberg where to use his own words, he 'had such glorious teachers as BÜTSCHLI, GEGENBAUR, KÜHNE, V. MEYER, KOSSEL, ROSENBUSCH'. After a short period in Munich under RICHARD HERTWIG, he returned to Heidelberg and obtained the Ph. D. degree in 1902. From 1903–1913 he worked and taught in Munich. In 1914, GOLDSCHMIDT was selected by BOVERI to join him as a member of 'the newly founded ... wonderful Kaiser Wilhelm Institut für Biologie, Berlin-Dahlem'. Soon after, for reasons of health, BOVERI had to give up his projected move to the Institut. GOLDSCHMIDT accepted his appointment which extended over 22 years, the last 15 of which he served as a director. In 1936, after the passage of the 'Nürnberg Laws', he accepted an invitation to join the Zoology Department of the University of California. 'This turned out to be one of the most happy events of my life, crowned by becoming an American citizen in 1942'. Thus he wrote in an autobiographical sketch filed, by request, with the National Academy of Sciences in Washington (1948). By then he had, according to American custom, included a middle name in his publications: RICHARD BENEDICT GOLDSCHMIDT.

In Berkeley he taught genetics and cytology for more than a decade and uninterruptedly continued his research for 22 years. Reports on experiments and wide ranging books followed one another. Even after his death two papers appeared in print.

GOLDSCHMIDT's work covers nearly 60 years of tireless productivity. When, in 1954, he compiled a list of his 17 books and approximately 250 papers he divided the latter into the following classes: Protozoology (1904 to 1907), Cytology (1902–1950), Embryology (1900 to 1935), Histology and Neurology (1903–1910), Acrania (1905 to 1933), Gynandromorphism (1922–1937), Intersexuality (1911–1951), General Sex Determination, Sex-controlled Heredity (1910–1953), Genetics and Evolution (1911 to 1953), Genetics: Mendelian Analysis and General (1913 to 1954), Physiological Genetics (1916 to 1952), Human Heredity (1927–1953), Biographical, Popular Science, Varia (1916–1953). He listed his books under Technical, Textbooks, Popular and Travel. Among these were such works as *Die quantitativen Grundlagen von Vererbung und Artbildung* (1920), *Mechanismus und Physiologie der Geschlechtsbestimmung* (1920), *Physiologische Theorie der Vererbung* (1927), *Die sexuellen Zwischenstufen* (1931), *Physiological Genetics* (1938), *The Material Basis of Evolution* (1940), *Theoretical Genetics* (1955); *Einführung in die Vererbungswissenschaft* (first edition 1911, fifth edition 1928); *Ascaris, eine Einführung in die Wissenschaft vom Leben* (first edition 1921, third edition 1953); *Neu-Japan* (1927). Translations of his books appeared in English, French, Hebrew, Japanese, Polish, Russian, Spanish, and Yugoslavian. His latest volume, the charming *Portraits from Memory, Recollections of a Zoologist* (1956) is in the process of being translated into German. An autobiography went to press this spring.

GOLDSCHMIDT's influence on the biology of the twentieth century rested on observation and experiment as well as on the theory-building sweep of his imagination. His outstanding experimental accomplishment was the long series of crosses between geographical races of the gypsy-moth *Lymantria*. It led to an analysis of the phenomenon of intersexuality which went far beyond

the framework of classical genetics. He had early trained himself to be a revolutionary of science. He reached his height in his endeavors to build a dynamic physiological genetics on the static and material basis which MENDEL and MORGAN had laid and which he admired as such without reservation. He raised his voice in warning of a too ready acquiescence in apparently established concepts of the gene and some widely held genetic interpretations of evolution. He was willing to face the strong opposition to his unpopular ideas but he lived to see them move into the forefront of contemporary thought.

He lectured before thousands of eager listeners – students, colleagues, men of other professions and interested lay people – in Europe, America, Asia, and Australia. Three periods which he spent in Japan have been historic events in the history of genetics of that country. Among his students, pre- or postdoctoral, were men and women like BUCHNER, RHODA ERDMANN, GARDNER, ALOHA HANNAH-ALAVA, MASUI, MINOUCHI, NACHTSHEIM, POPOFF, SEILER, and SÜFFERT. In a wider sense, the circle of this disciples encompasses biologists everywhere.

GOLDSCHMIDT's interests went greatly beyond his 'beloved zoology'. Until middle age he excelled in various sports. He molded his life after Goethe and only recently, he and his wife systematically read again all of Goethe's works. His main avocation was that of a connoisseur and collector of art. The home which he and Mrs. GOLDSCHMIDT created became a treasure house of paintings, statues, and other objects, each of which had been acquired with love and insight. The art of the orient was his particular area of pleasure and understanding. The many visitors which Mrs. GOLDSCHMIDT and he welcomed gained lasting impressions from these occasions.

The life of RICHARD GOLDSCHMIDT was woven into the framework of this time. As a young man he served in the army of his native country. When World War I kept him in the United States where he had come from Japan, he first enjoyed the hospitality of American scientific institutions; but when America entered the war, his professed loyalty to Germany led to his internment as an enemy alien. When in 1919 he returned to the Kaiser-Wilhelm-Institut he soon rose to a commanding position among the great scientists who upheld the tradition of intellectual achievements of their country. When that tradition broke in 1933 he had to prepare to leave Germany and build up anew his life's activities and to take roots again in a different country. Bitter, he resumed his tasks at the age of 58 years. His reception in America, though warm in a personal way, was cold scientifically. The breadth of his biological wisdom was appreciated little and the iconoclasm of his views regarded as the irritating fancy of a man of the past. But slowly recognition came again. Following the numerous honors which had earlier been RICHARD

GOLDSCHMIDT's share, election to the National Academy occurred in 1947 when he was 71 years old. In 1950 the Genetics Society of America celebrated the Golden Jubilee of Genetics and GOLDSCHMIDT was asked to give the opening address. The Cold Spring Harbor Symposium on Genes and Chromosomes in 1951 saw him as the first speaker. In 1953 he was elected President of the 9th International Congress of Genetics in Bellagio.

A reconciliation came in his attitude to Germany. He had never broken the bonds of personal friendship and he and his wife had sent many *Care* and other packages to the devastated post war country. While he could not bring himself to visit his homeland again, he was willing to accept on the occasion of his 75th birthday, honorary membership in the Deutsche Zoologische Gesellschaft and an honorary degree from the Freie Universität Berlin. And in his last year he addressed a German audience when he spoke with his Frankfurt accent over the Süddeutsche Rundfunk on 'Aus der Geschichte der Vererbungswissenschaft'.

He never attained old age. He could have been the grand old man of more than a half century of biology – and yet he never was given that *retrospective* title. People corresponded with him and visited him as the *contemporary* leader.

He knew his worth – how could he help it. He openly and with relish levelled his critique against those whose view he opposed. Only a few years ago, he chose the pungent title 'Pricking a bubble' for a polemic. But he could also write about his non-conformist views under the modest title 'Evolution, as viewed by one geneticist'. He charmed his adversaries when they met in person, with his ability to divorce the intellectual points of divergence from the appreciation of the fellow scientist. He inspired awe by his achievements and by an often forbidding appearance. Yet his kindness and solicitude became apparent to those who approached him. His assistants, he treated as fellow scientists. To his friend the late Oberpräparator AIGNER he dedicated a paper in Naturwissenschaften. 'In Ph. D. examinations' one colleague wrote him, 'we depended on you to bring forth the most favorable side of the candidates' performance, and I always thought of you as the aspiring students' 'Advokat'. Another letter read: 'How impressed I was (on the boat to Stockholm in 1948) with your thoughtful interests in us young unknowns!!' 'The guardian angel of the small people' he was called in 1927.

RICHARD GOLDSCHMIDT formed his existence into a piece of art. It had the classical features of comprehensiveness, depth, and achievement. It had the modern features of expressionism where emphasis broke the bounds of beauty conceived too narrowly. Like any mortal he did not attain perfection, nor did he aspire to it. Like few mortals, he achieved greatness.

Berkeley, California.

CURT STERN