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Sommario/riassunto

In 1991, the National Academy of Sciences inaugurated a series of scientific colloquia, five or six of which are scheduled each year under the guidance of the NAS Council's Committee on Scientific Programs. Each colloquium addresses a scientific topic of broad and topical interest, cutting across two or more of the traditional disciplines. Typically two days long, colloquia are international in scope and bring together leading scientists in the field. Papers from colloquia are published in the Proceedings of the National Academy of Sciences (PNAS). The colloquium "Variation and Evolution in Plants and Microorganisms: Toward a New Synthesis 50 Years After Stebbins" celebrates the 50th anniversary of the publication of Stebbins' classic book, Variation and Evolution in Plants . Variation and Evolution in Plants , published in 1950, the last of a quartet of classics that, in the second quarter of the 20th century, set forth what became known as the "synthetic theory of evolution" or "the modern synthesis." The other books are Theodosius Dobzhansky's Genetics and the Origin of Species (2), Ernst Mayr's Systematics and the Origin of Species (3), and George Gaylord Simpson's Tempo and Mode in Evolution (4). The pervading theory of these books is the molding of Darwin's evolution by natural selection within the framework of rapidly advancing genetic knowledge. Variation and Evolution in Plants distinctively extends the scope of the other books to the world of plants. Dobzhansky's perspective was that of the geneticist. Mayr's was that of the zoologist and systematist. Simpson's was that of the paleobiologist. All four books were outcomes of the famed Jesup Lectures at Columbia University. Plants, with their unique genetic, physiological, and evolutionary features, had been left out of the synthesis until then. In 1941, the eminent botanist Edgar Anderson was invited to write botany's analogue to Mayr's Systematics and the Origin of the Species and to publish it jointly with Mayr's book. Anderson did not fulfill the task, and Stebbins was thereafter invited to deliver the Jesup Lectures in 1947. Variation and Evolution in Plants is the outgrowth of those Lectures.