

Disciplining Evolutionary Biology: Ernst Mayr and the Founding of the Society for the Study

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# DISCIPLINING EVOLUTIONARY BIOLOGY: ERNST MAYR AND THE FOUNDING OF THE SOCIETY FOR THE STUDY OF EVOLUTION AND *EVOLUTION* (1939–1950)

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Ernst Mayr's contributions to the growth of evolutionary biology have been more multifaceted than his scientific work alone, impressive as that is. In addition to the publication of his Systematics and the Origin of Species in 1942, which effectively brought systematics into the wider Evolutionary Synthesis (and earned him one of the principal roles as architect), as well as his extensive postsynthesis work in evolution and systematics, Mayr has played the roles of historian, philosopher, organizer, and general promoter of evolutionary biology. So critical are these roles, that, taken as a whole, the best way to view Ernst Mayr is as a chief discipline builder (if not the chief discipline builder) of evolutionary biology. In this paper, I examine one little-known feature of Mayr's work that brings into relief, if only partially, this disciplining role: his organizational efforts to found a society for the study of evolution and his sponsorship and editorship of the journal *Evolution* in the years 1939–1950. This paper and the larger study that provides full documentation (Smocovitis 1994) are based on examination of the historical record of the papers left by the successive secretaries of the Society for the Study of Evolution (SSE) and now housed in the archives of the American Philosophical Society.

EARLY HISTORY OF THE SSE:
THE SOCIETY FOR THE
STUDY OF SPECIATION AND THE
COMMITTEE ON COMMON PROBLEMS IN
GENETICS, PALEONTOLOGY AND SYSTEMATICS

Mayr's involvement in organizational efforts to found a society for evolutionists in the mid-1940s followed efforts of systematists/naturalists to draw together speciation workers in the 1930s (Cain 1993). Because of the increasing sense that a "new" systematics was emerging that would bring together the experimental methods of genetics and ecology with taxonomy, speciation workers began to discuss founding an organization that would facilitate communication transfer. At a special symposium titled "Speciation" organized by Theodosius Dobzhansky at the 1939 American Association for the Study of Science meetings held in Columbus, Ohio, Mayr took part in the initial negotiations that began such a society. The initial suggestion had come from Julian Huxley, who was then visiting the United States on behalf of European war efforts (Huxley was a keen organizer of other scientific societies). Other participants included Carl Epling and Alfred E. Emerson, as well as Dobzhansky. The new Society for the Study of Speciation that grew

out of this meeting began in 1940 with the organizational efforts of Emerson and the financial assistance of an anonymous donor. At its peak, the society comprised approximately 375 members in fields as diverse as botany, zoology, bacteriology, anthropology, morphology, cytology, genetics, ecology, paleontology, comparative psychology, comparative physiology, embryology, population biology, and taxonomy. Mayr was a member, but the chief organizational role was played by Emerson.

Because the society was intended to be an informal information service, activity consisted of the preparation and publication of mimeographed bulletins to increase communication among workers. The new society was short-lived, however, in part because of the United States' entry into the theater of the world war, which disrupted researchers and limited resources, and in part because Emerson's leadership appears not to have been sufficient to carry the group through this difficult period. The society soon foundered. Two other groups continued to support evolutionary activity in the early 1940s: the Biosystematists, an informal group, chiefly of botanists in the San Francisco Bay area, and the Committee on Common Problems in Genetics, Paleontology, and Systematics based in New York. The Committee, sponsored by the National Research Council and founded officially in 1943, was initiated by the geologist Walter Bucher at Columbia University and included New Yorkbased workers like Dobzhansky, L. C. Dunn, and G. G. Simpson, among others. Because the Committee drew heavily on paleontologists in the New York area (Bucher had hoped to bring together geneticists and paleontologists), the goals of this Committee were appreciably wider than those of the earlier Society for the Study of Speciation; thus, the newer organization, especially under Simpson's influence, focused not only on the dynamics of speciation, but also on evolutionary rates and trends, and on evolutionary processes as a whole.

Mayr was an early active participant in the Committee and played an increasingly important role in its functioning. Because the Committee was operating during the difficult war years, the primary activity was the preparation of mimeographed bulletins, including letters in the form of rapid exchanges and other informational items that increased communication among evolutionists across the United States. Mayr's involvement in Committee activities accelerated dra-

matically when he took on the task of editing and distributing these mimeographed bulletins to subscribers. Under his editorship, the bulletins became extremely successful and made apparent to Mayr and others the need to establish a journal that could reflect what was clearly becoming a new and exciting synthetic approach to evolutionary studies. Support for a new evolutionary journal increased as the successive—and highly successful-volumes of the Columbia Biological Series made their way to wider audiences, convincing them of the emergence of a common synthetic field of evolution. This belief was further reinforced by the appearance in 1942 of Julian Huxley's Evolution: The Modern Synthesis, which helped to promote the new synthetic theory of evolution.

The need for a publication outlet for evolutionary studies was heightened further still by changes in what had been the primary journal for naturalists/systematists, the Jaques Cattellowned American Naturalist, which had begun to exclude more traditional evolutionary articles. With the end of the war, therefore, moves were made to create such a journal, with the accompanying formation of a society. In this critical phase of the new synthetic field, Ernst Mayr began to play what was clearly the most important role in launching the journal-issuing society, the Society for the Study of Evolution and its journal Evolution.

# MAYR AND THE FOUNDING OF THE SSE, 1945–1950

From late in 1945 to the early 1950s, Mayr devoted much of his time (and more than a little energy as the drop in his publications at this time indicates) to organize the new field of evolutionary biology. As he indicated in the numerous letters and memos he distributed widely, a formal organization would go a long way toward unifying the disparate yet related evolutionary fields. He began late in 1945 to solicit the aid and cooperation of British systematists, who, under the leadership of Huxley, had formed a related society, the Association for the Study of Systematics in Relation to General Biology. Huxley heartily supported Mayr's efforts and had offered the possibility of aid from British sources that would promote the newer experimental systematics in a journal with the suggested title of the Journal of Experimental Taxonomy. Mayr also began to solicit advice and garner support from as many colleagues as possible. All seemed

to favor the creation of a journal-issuing society, though there were numerous points of disagreement over its goals, its operational base, the best way to proceed with the organization, and even the proper naming of the society and journal. Mayr played an important role in smoothing over difficulties among the representatives of disparate fields, negotiating with potential members. Negotiations with Huxley and other British workers became especially difficult, because American workers favored an international journal, but one that would be based in the United States rather than in Britain, thought then to be in an unstable political climate. To discuss formally the creation of a new society, Mayr suggested that interested individuals meet at the 1946 St. Louis meetings of the American Association for the Advancement of Science. Emerson, the former leader of the defunct Society for the Study of Speciation, was especially supportive and favored Mayr's suggestion to call a meeting of the former society in the aid of the newer society.

At the 1946 meeting in St. Louis, on Saturday, March 30, 1946, 58 attendees—the "founding fathers"-signed an official document under the title of the Society for the Study of Evolution (see fig. 1; the official constitution was approved at the Boston meetings in December 1946). Ernst Mayr's handwriting on the top of the document led the way for the other signatories. Although Emerson chaired the first meeting, Ernst Mayr played a critical role in bringing the group to consensus by smoothing over difficulties and making sure that members felt their respective viewpoints were represented. It was with Mayr's encouragement that members favored the wider goal of including as many as possible of the branches of biological sciences that informed evolution, not just favoring the narrow emphasis on speciation. Thus, the name of Society for the Study of Evolution (SSE) was voted on and approved (alternatives voted on were: The Society for the Study of Speciation, The Society for the Study of Organic Evolution, The Evolution Society, The Darwinian Society, The Society for the Study of Evolution and Speciation, and The Society for the Study of Evolutionary Processes). The society's statement of purpose was "The promotion of the study of organic evolution and the integration of the various fields of biology" (quoted from the minutes of the first meetings). The new society drew on the funds of the former Society for the Study of Speciation (\$283.78) and joined forces with the NRC-Committee under the new rubric of the SSE. Though some difficulties arose, especially with respect to the new society's relationship with the older American Society of Naturalists, there appeared to be not only consensus, but also a great deal of enthusiasm for the new SSE. On May 11, 1946, there appeared the following announcement in *Nature:* 

A Society for the Study of Evolution was formed on March 30, 1946 on the occasion of the meeting of the American Association for the Advancement of Science at St. Louis. The object of the Society is the promotion of the study of organic evolution and the integration of the various fields of biology, such as taxonomy, paleontology, genetics, that are interested in evolution.

The problem of funding for the new journal and start-up funds for the new society dragged on for nearly eight months after the St. Louis meeting. Ernst Mayr-now as first Secretary of the SSE (G. G. Simpson was first President) continued his relentless activity, searching for a suitable press, and obtaining funding for the society and journal. Mayr's role as chief negotiator-possibly even diplomat-in this phase of the society became apparent as he negotiated trouble spots with Huxley who had set his hopes on a British base, the Cattells who felt that the new society threated to undermine The American Naturalist, and members of the American Society of Naturalists who feared that the new society would supplant their older society. He solicited Simpson's aid in preparing an application to the Carnegie Corporation for a donation of \$5000 to cover the initial expense of the journal, but the effort failed. Funds to begin the journal (\$5000) came as the result of a grant application that Mayr wrote with the help of Simpson (who was skilled at grantsmanship) to the American Philosophical Society under their Reserve Fund for Post-War Expenditures. Support for the grant application was especially strong from astronomer Harlow Shapley, who sat on the committee, though it was rejected by E. G. Conklin, the sole biologist on the committee, who did not endorse the future of evolutionary studies. At the same time, Mayr took an active role in publishing the journal as efficiently and inexpensively as possible by writing to some six presses before he settled on Lancaster Press. In late 1946, Mayr again served as a conduit for information exchange as he solicited the advice of the approx-

# the society for the study of evolution

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imately 445 members on the character of the journal.

### THE NEW JOURNAL: EVOLUTION

The seemingly trivial matter of choosing a name for the new journal involved a complex round of negotiations that involved Mayr. Some of the older members wanted the word "organic" in the title to distinguish between the various types of evolution, whereas others wanted to adopt a longer title with evolution somewhere in the name. The title Evolution (Mayr's preferred title) was eventually chosen because of its simplicity and its correspondence with other journals like Ecology and Genetics. A broad title like this would also bring in the widest readership. The subtitle An International Journal of Evolutionary Biology was initially appended to further describe the journal, but this was later amended to International Journal of Organic Evolution (this amendment likely resulted from the complaints of paleontologists who did not consider themselves biologists, or "neobiologists," to use Simpson's term). Mayr was instrumental in seeing not only these decisions through, but also in proposing the composition of the editorial board that would include the diversity of members' interests and represent the international character of the journal. Twelve members, including five international representatives, would constitute the editorial board, which would accept papers regardless of place of origin, though the publication language had to be English.

Mayr was also instrumental in developing the design and other publication details of the journal: four issues, of approximately 100 pages each per year, in a two-column style modeled after *Ecology*. In anticipation of increasing membership, Mayr increased the initial copies of the journal from the council-backed 700–800 copies

to 1500 copies. Mayr eventually used these extra copies as an enticement to draw in potential new members and authors. With the generous number of 50 free reprints distributed to each author, dissemination and promotion of the new journal would be rapid. The price of the journal was set at \$5.00 for each member. Though Mayr spearheaded the technical details of the production of the journal, the final decisions rested with SSE members, who appeared to approve his suggestions and ideas. At the Boston meetings in December 1946, the SSE officially designated Mayr the editor of the journal.

### MAYR'S EDITORIAL ROLE IN EVOLUTION

The task of editor of a scientific journal was especially onerous in the 1940s. Not only did editors frequently engage in soliciting suitable manuscripts, which was especially difficult for a new journal, but also served as major reviewers, copy editors, intermediaries with the printers, and financial managers who paid bills and arranged for reprints. Ernst Mayr initially performed all of these duties, taking on an editorial assistant, Sophie Prywata.

Among the most burdensome of duties for the first editor of *Evolution* in particular was securing suitable manuscripts, because at first there were not enough high-quality manuscripts for publication. Submissions were slow, in part because the journal was new, but also because many of the younger potential contributors had only just returned to active research from their war duties. At this critical stage, Mayr aggressively solicited suitable manuscripts by writing to potential authors: in his first six months as editor, he used nearly 500 sheets of newly printed stationery for this purpose. At least one manuscript was written specifically to fill the first volume of the journal, and two issues had to be combined in the first

Fig. 1. Foundation document of the founders of the Society for the Study of Evolution, St. Louis, March 30, 1946. The small handwriting above the signatures is by Ernst Mayr. The signatures, by column from left to right are: (1) E. Mayr, Th. Dobzhansky, Sewall Wright, Thomas Park, W. S. Stone, Austin Phelps, M. F. Day, J. N. Dent, M. R. Irwin, I. E. Gray, F. M. Hull, John H. Davis, J. Chester Bradley, Hyman Lynner, Ruth Patrick, Herbert P. Riley, John M. Carpenter, Robert L. Usinger, E. Gorton Linsley, F. J. Brounp, Hampton L. Carson, William A. Dreyer, Ernst C. Abbe, Edgar Anderson, Harrison D. Stalker, Richard W. Holm; (2) W. H. Camp, G. G. Simpson, George B. Happ, Donald C. Lowrie, C. Clayton Hoff, Alfred Kinsey, E. Novitski, A. Franklin Shull, C. C. Tan, C. Pavan, J. T. Patterson, G. B. Mainland, F. B. Isely, Albert P. Blair, William Hovanitz, M. Demerec, E. B. Babcock, A. M. Chickering, G. W. Wharton, Waldo L. Schmitt, E. Raymond Hall, Arnold Grobman, Carl Epling, William M. Clay; (3) Charles H. Seevers, Rupert L. Wenzel, H. S. Dybas, Lamont C. Cole, Robert P. Wagner, Alfred Emerson, W. Frank Blair, M. K. Elias. The document was reproduced and distributed to members at the 1970 SSE meetings in Austin, Texas. Photograph courtesy of James Crow and Donald Waller. An additional document listing founders also includes C. W. Metz.

year to make the volume complete. Because of Mayr's initiative, the first volume appeared on time in June 1947. The enthusiasm generated by the celebrated International Conference on Genetics, Paleontology, and Evolution held at Princeton in early January 1947 (this had been the planned final symposium of the Committee at the invitation of Princeton University) further increased interest in the synthetic approach to evolution. In part because of Mayr's idea of increasing the number of copies, which he quickly distributed or which sold out shortly, subscriptions to the journal and membership in the society soon increased. So great was the demand for the early volumes of *Evolution* that they had to be reprinted. Thus, Mayr's promotional campaign paid off.

The problem of securing enough suitable highquality manuscripts continued well after the first year of publication. What exactly counted as a suitable manuscript became a contentious issue, because the society had made a strong commitment to publishing papers representing the diversity of fields, organisms, and methods that encompassed the entire range of evolutionary studies. Mayr tried to include the diversity of member's interests, though the first issue—difficult enough to produce-overrepresented the research of Drosophila and genetics workers (despite Mayr's own support of equal time for systematics). Mayr continued to solicit and include manuscripts from all members, going so far as to publish an article by Rainer Zangerl representing the unpopular viewpoint of typological morphology.

Despite his attempts at equal time for all, Mayr received heavy criticism from members who felt their areas were being excluded. As early as 1947, Simpson complained formally to the society that not enough paleontology was included in the journal (though he did admit that it was the paleontologists themselves who had failed to submit suitable manuscripts). Unlike the paleontologists, botanists like G. Ledyard Stebbins, Jr. made numerous submissions to the journal, but felt that Mayr had favored animal studies over plant studies. Mayr appears to have directly addressed these concerns as well as others, notably the absence of other relevant fields like anthropology, by continuing to solicit manuscripts. The goal foremost in Mayr's mind was to construct a unified science of evolution by including suitable manuscripts and by excluding unsuitable ones. Mayr played a critical role by publishing papers that were not purely descriptive but rather reflected what he viewed as the dynamic new field of evolutionary biology that drew on, though did not exclusively rely on, experimental practices.

As the editorial correspondence indicates, exchanges that took place over the suitability of manuscripts were extremely heated and even threatened to divide members of the new society. These exchanges were part of a process in which the newer, more unified and synthetic approach to evolution was emerging. As first editor of *Evolution*, smoothing out relations between members, yet at the same time keeping a clear vision of the new synthetic field, Mayr helped to build consensus and thus played a key role in creating a unified science of evolution (see also Mayr's arbitration in the Fisher/Wright dispute recounted by Provine 1986).

Mayr continously played the role of consensus builder in the late 1940s as he led the difficult negotiations over relations and affiliations with other professional societies. In the 1950s, Mayr and other key SSE members continued to play and extend their roles as promoters of evolutionary biology and the SSE through their involvements in other scientific societies like the American Institute of Biological Science, through their semipopular works (which reached a wide audience), and through sponsoring special celebratory events like the Darwin Centennial Celebration at the University of Chicago on November 24, 1959. Although the university awarded many of the key figures honorary degrees in recognition of their contributions to evolution, Mayr, as a museum worker, was not eligible for a degree.

Since its founding, the SSE has grown to a 1993 membership of 3111. The journal *Evolution*— as readers will attest—continues to flourish, currently printing 5000 copies. Editors of *Evolution* continue to encounter difficulties in obtaining manuscripts representative of all the subdisciplines of evolutionary biology.

# CONCLUSIONS: ASSESSING MAYR'S ROLE AS DISCIPLINE BUILDER OF EVOLUTIONARY BIOLOGY

In this paper, I have tried to highlight a little-known yet critical feature of Mayr's lifework by focusing on his efforts to organize evolution through the founding of the SSE and through his editorship of *Evolution*. The centrality given to Mayr in this historical reconstruction is not

merely an artifact or happenstance of the documents surveyed, nor does it reflect any personal allegiance to Mayr (I met him only briefly on two occasions). Rather, it reflects a previously ignored yet extremely influential and critical role that Mayr played in the history of evolutionary biology.

Mayr's contributions to the SSE and Evolution were recognized by Simpson, who, in his autobiography Concession to the Improbable, stated that Mayr was the "effective leader" in the early period of the SSE and gave Mayr generous credit for his "onerous" task as editor of the journal. In his later correspondence, Emerson also acknowledged Mayr's efforts.

Mayr's role was to serve as a central conduit for communication transfer in a network of evolutionists who were attempting to iron out their differences and find points of agreement as part of the process of the emergence of the new discipline in a new, well-defined community of evolutionary biology. As I have argued elsewhere (Smocovitis 1992), evolutionary biology was emerging only roughly during the period of the synthesis. Mayr not only actively contributed to the location of systematics in this discipline through the publication of Systematics and the Origin of Species, but also guaranteed equal representation by as diverse a group of evolutionists as possible through his organizational and editorial role that helped to bring the group to consensus. In addition to connecting workers through his extensive correspondence, Mayr garnered resources through grant proposals, promoted the new synthetic evolution, and, by editing Evolution, directed the process of turning the formerly fragmented evolutionary studies into a unified science that organized the diversity of members, organismic models, and approaches within a unified evolutionary framework.

Mayr's influence in evolutionary biology was amplified further in the 1960s and 1970s as he began to defend evolutionary biology against repeated attacks by molecular biologists and biochemists like George Wald (Smocovitis 1992). Through his numerous essays and editorials, Mayr successfully argued for equal time for evolutionary biology and promoted the centrality and unifying properties of evolutionary biology within the biological sciences. His later work has influenced, indeed helped define, the modernhistory and philosophy of biology, which is characterized by Mayrian preoccupation with the relative strengths of all the sciences. In 1967, Mayr

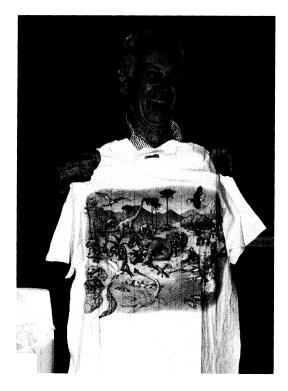


Fig. 2. Ernst Mayr at the surprise celebration in honor of his ninetieth year held at the University of Florida, Gainesville, March 18, 1994. Mayr is holding his birth-year gift from the Florida Museum of Natural History and the departments of Zoology and History. Photograph by Donald Dewsbury. Courtesy of Betty Smocovitis.

directly supported the history of biology, by helping to found yet another journal, *The Journal of the History of Biology*, with Everett Mendelsohn. In recognition of his work, Mayr was elected Honorary President (a distinction he shares with philosopher Marjorie Grene) of the International Society for the History, Philosophy, and Social Studies of Biology (ISHPSSB), launched officially in 1989.

I began this article by stating that Ernst Mayr's work is more multifaceted than has been previously recognized. This article has begun to assess Mayr's organizational role, but other features of his work, notably his historical and philosophical studies and how they interact with his scientific corpus, require further examination. Moreover, Mayr's more personal beliefs and qualities must be considered in any further analysis of his role in evolutionary biology. (*This* historian is left in awe of his extraordinary energy in organizing the SSE and in editing *Evolution*.)

Given what we currently understand of his roles as systematist, evolutionist, historian, philosopher, organizer, and promoter, Ernst Mayr best deserves the distinction of being considered the central disciplining force of evolutionary biology.

#### **ACKNOWLEDGMENTS**

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