Sociality at the Pinnacle

Edward O. Wilson
Museum of Comparative Zoology
Harvard University
Cambridge, MA 02138

There are, in my opinion, four pinnacles of social evolution: the colonial invertebrates, the social insects, the highly social vertebrates, and the human species. The second group, comprising termites, ants, and some species of bees and wasps, has held my attention since childhood. By the age of 16, in Alabama, I had assembled a sizable collection of ants and decided to build a career on their study. Twenty-five years later, now a member of the Harvard faculty, I look back with a sense of fulfillment on this activity, I grow insecure and fretful. The synthesis of knowledge of social insects was an important task to satisfy this idiosyncrasy. To start, the literature was scattered through mostly obscure journals, in several languages, and was not easy to find. The best ideas from population genetics, demography, predator-prey models, and so forth, could be usefully compared. They are also important to synthesize was also in my bones. I am a clerk by nature; if things have not been put in some kind of order, I grow insecure and fretful. The synthesis of knowledge of social insects was an important task to satisfy this idiosyncrasy. To start, the literature was scattered through mostly obscure journals, in several languages, and was not easy to find. The best ideas from population genetics, demography, predator-prey models, and so forth, could be usefully compared. They are also important.

During that quarter-century, 1945 to 1970, entomologists had acquired some remarkable new insights in the biology of the social insects. We came to understand how castes are determined and how caste systems evolved. With the aid of William D. Hamilton’s kin selection theory, we also understood—at least in part—why the systems evolved. And, with the aid of chemical microanalysis, we had begun to develop a clearer picture of the remarkable medley of pheromones employed by different castes, the most complex chemical communication system known in any group of organisms. Finally, we knew much more about the ecology of the insects and had come to appreciate, in preliminary fashion, the ways in which they employ colonial organization to dominate the terrestrial environment. By the late 1960s, it was clearly time for a synthesis of all this new information. Up to that time, I had enjoyed the thrill of discovery, as reported in technical articles. But the urge to synthesize was also in my bones. I am a clerk by nature; if things have not been put in some kind of order, I grow insecure and fretful. The synthesis of knowledge of social insects was an important task to satisfy this idiosyncrasy. To start, the literature was scattered through mostly obscure journals, in several languages, and was not easy to find. The best ideas from population genetics, demography, predator-prey models, and so forth, could be usefully compared. They are also important.

This is what, I believe, The Insect Societies accomplished. It also provided an introduction and vade mecum for young researchers and helped set the agenda in the field for the next two decades. For me personally, it imparted a momentum that led to the publication of Sociobiology: The New Synthesis, in 1975.