Book Reviews

Itard's Pupil

The Wild Boy of Aveyron. HARLAN LANE. Harvard University Press, Cambridge, Mass., 1976. xiv, 352 pp., illus. $15.

Of all phenomena of human development, none is more central to humanization than the unfolding of language during the second and third years of life. Based on biological predispositions and good-enough parenting, learning to understand and speak is inextricably associated with all spheres of growth: with the child's mental image of other people and himself; with the ability to execute plans, cope with interference, and regulate activity; and with increasing ability to anticipate and experiment. With language comes sharpening of perceptual and intellectual discrimination, as well as maturing of memory, humor, imagination, empathy, and dreams. The natural history of these developments can be described in terms of the toddler's special, but almost universal, gift: the emerging capacities for internal representation (codes, symbols, and transformational rules) which radiate out from, and underlie, human language competencies.

For most children language skills seem to come as naturally as running and laughing, but for some language comes slowly, strangely, or not at all. The careful study of these handicapped children reveals just how much that is unnoticed goes into the normal unfolding of language, just as Victor, the "wild boy," was expected to show the Observers of Man how social intercourse shaped man's higher faculties.

In the first half of this book, Lane describes Victor's capture, his assignment to his educator-physician, Jean-Marc Itard, and the course of his education. The opportunity of learning about man's inborn nature by studying an individual supposedly deprived of all social contact excited great intellectual interest. "What is man, essentially?" seemed answerable by studies of tribes, apes, and wild children, and the detailed reports about Victor prepared by Itard and others (which are translated and made available here for the first time) charmingly reveal how questions of speculative philosophy were recast as diagnostic problems.

The puzzle posed by Victor intrigued not only Itard's contemporaries but numerous others, right down to Lane. Presented with Victor today, we could call upon many modern techniques for neurological, sensory, cognitive, linguistic, behavioral, and metabolic assessment. Considerable weight would still be placed, however, on the type of diagnostic methods pioneered by Itard: conscientious observation, looking for small clues about abilities obscured by overriding disabilities, and assessment of the child's response to precisely designed education. The absence of detailed historical information would hamper diagnosis, but perhaps testing would lead to a specific descriptive and etiological diagnosis such as structural brain malformation, damage resulting from infection or trauma, or a sensory disorder. Yet it is perhaps just as likely that we would be left with a syndromic classification and few hard etiological facts, as is most often the case when we diagnose primary childhood autism (which Lane's detailed account seems, to me, to rule out) or primary developmental aphasia (a relatively good candidate). In understanding such a child, we would have to guard against mistaking a label, such as "mental retardation," "autism," or "atypical development," for an explanation.

These and other major problems in medical epistemology are raised by Lane's lively reconstruction. Faced with Victor, clinicians then and now might wonder about the causal connections between intellectual and social disabilities; between organic substrate and functional capacity; and between the effects of disturbed children on parents and of disturbed parents on children. Was Victor rejected because he was defective, or the other way around? Did he lack contact with parental figures during the first years of his life (which seems quite unlikely), or was he unable to make normal use of a more or less normal environment? If he was organically impaired, would he thus be uneducable in certain areas? Was he disturbed because he could not use language, or uncommunicative because he was unable to form normal social attachments? It is fascinating and dismaying to recognize how enduring such questions have proved to be.

The second half of the book traces the historical impact of behavioral pedagogy, which Itard developed with Victor and refined with deaf children, on special education and, through Maria Montessori, on preschool teaching and "early intervention." Of special interest is Lane's account of the bitter disputes between advocates of the oral method of education for the deaf and educators who recognize the value of signing. Countless deaf children over the last century have suffered from zealous commitment to exclusively oral education. They have been deprived of education in what may be considered their most natural language, a nonauditory one, because learning to talk has been more valued than learning to communicate. Lane's linguistic analysis of, and appreciation for, sign language (and "comprehensive education") is timely from a theoretical point of view and, perhaps, practically useful.

There are several matters on which questions can be raised about Lane's analysis. I doubt that he is quite correct in speculating that Victor's prognosis would have been greatly altered by signing or some other curricular modification. Victor's difficulties with imitation suggest that he would not have found signing easy to master, although we are now learning how useful signing may be for aphasic children (who already have inner language) and, to a lesser degree, for nonverbal autistic children. One may also question Lane's occasionally uncritical enthusiasm for operant models of language development and cognitive training, which are useful but limited. Concomitantly, he may place too little emphasis on the possible impact of affective, motivational factors (for example, the effect of the teasing, manipulating, and exhibiting that Victor endured, often at the hands of Itard). In general, my impression is that the book reflects the influence of the archives more than that of the clinic.

That Lane has unearthed so much new information is evidence that curiosity, perseverance, and a good case can yield unexpected riches, even from a well-worked mine. Probably we will never know all we would like to about Victor's early life, physiological functioning, or

behavioral organization. Yet we need not be overly concerned that Victor's case may be closed without all the data being in. My own sense is that he had a central language disorder and took to the woods relatively late in life, but it is nice that there may be some historical riddles that will continue to suggest new hypotheses as our conceptual systems and knowledge expand.

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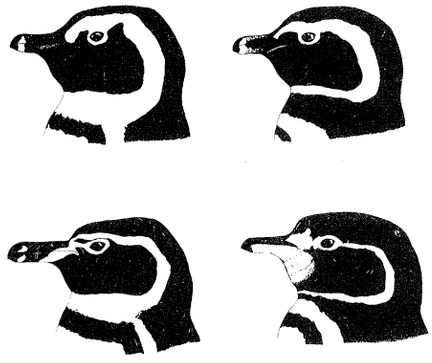
An Unusual Order of Birds

Penguins. Past and Present, Here and There. GEORGE GAYLORD SIMPSON. Yale University Press, New Haven, Conn., 1976. xii, 150 pp., illus. + plates. $10.

George Gaylord Simpson, interpreter of evolution, has written a love story about his 43-year affair with penguins. It is aimed at the biologically unsophisticated reader and tells in nontechnical language everything you want to know about these highly specialized aquatic birds.

Simpson's specialty is fossil mammals, but in the course of searching for Miocene mammal skeletons in Patagonia in 1933 he stumbled on the largest single collection of fossil penguin bones that has ever been found. He offered the fossils to a number of ornithologists to study, but since they were not osteologists they declined, and he took on the job himself. His 1946 monograph stands as a landmark in penguin study, and he has subsequently written several other papers on fossil penguins. On his travels all over the Southern Hemisphere he has seen most of the 18-odd species of living penguins. He has also read widely about living penguins, and distillations of that published material constitute the subject matter for most of the chapters of this book.

Simpson contributed the chapter on fossils to a recent technical symposium on penguins (*The Biology of Penguins*, edited by Bernard Stonehouse; reviewed in *Science*, 8 August 1975) and has drawn heavily on that volume. I had expected that his chapter on fossil penguins in the present volume would be more enlightening about their appearance. But it seems that fossil penguins, which date back some 40 million years and some of which may have weighed 300 pounds, left only wing and leg bones and provide no evidence linking them closely with any other order of birds. Anyway Simpson is intrigued with the history of European discovery of living penguins, their names, morphology, biology, and distribution. His account hangs together well, and he has a fine common touch that makes his firsthand presentation of biological principles easily comprehensible. He brings the account right up to the present by showing that, although penguins have fared pretty well in their encounters with man, oil spills by supertankers that now regularly round the Cape of Good Hope threaten the survival of South Africa's blackfooted penguins.



Recognition marks of penguins of the genus *Spheniscus*. Clockwise from upper left: *S. demersus*, the African penguin, commonly called the blackfooted penguin; *S. magellanicus*, the magellanic penguin; *S. mendiculus*, the Galápagos penguin; *S. humboldti*, the Peruvian penguin, sometimes called the Humboldt penguin. "The four species . . . are so much alike that their separation must have occurred fairly recently. . . . Surprise has been expressed that the Galápagos penguins should differ from the Peruvians and resemble the magellanics when it is highly likely that they are more closely related to the Peruvians. However . . . the biological need, and hence the impact of selection, was just to distinguish . . . Peruvian and Galápagos . . ., not to distinguish Galápagos and magellanics, which were not emerging from the same common ancestry and have never been in contact as developed species." [From *Penguins: Past and Present, Here and There*]

All the living species are illustrated in color or black-and-white photographs, and head studies are included to show recognition marks. A few of the photographs are good, but many are prosaic frontal or profile portraits. The book is marred by a few typographical errors and inaccuracies, a figure transposition, and crudely drawn distribution maps. But it is certainly worth reading. There are few 150-page biology books that present so much so well.

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The Family Sphecidae

Sphecid Wasps of the World. A Generic Revision. R. M. BOHART and A. S. MENKE in collaboration with H. S. Court, F. D. Parker, E. E. Grissell, and D. P. Levin. University of California Press, Berkeley, 1976. x, 696 pp., illus. $42.50.

Workers on the stinging Hymenoptera have looked forward to the publication of this volume, which has absorbed 12 years of the authors' time. The book deals with a group of wasps that is not only one of the largest (7634 species in 226 genera are listed) but also one of the most diverse, morphologically and behaviorally. A comprehensive survey of this group, considering all the scattered information that is available, thus not only should be of significance to wasp specialists, but should also serve as a model for similar studies of other groups of organisms. In many ways this book fulfills these expectations, although some aspects are disappointing.

The initial sections, dealing briefly with general sphecid behavior, zoogeography, morphology, and systematics, will be the most useful for nonspecialists. The morphology section, which includes a glossary, will be particularly useful, since the terminology for wasp structure is still unsettled. (It is unfortunate that the authors have chosen to use "gaster" for the "definitive abdomen," however, since this term has a different meaning when applied elsewhere in the Hymenoptera.) The remainder of the book consists of detailed and well-illustrated treatments of each of the 11 subfamilies, including general discussions of characteristics, systematics, and biology for subfamilies, tribes, and subtribes, keys down to genus, and for each genus a description, an account of systematics, distribution, and biology, and a checklist of species. This is information that is fundamental to any further study of the systematics or biology of any sphecid wasp, and the present compilation should provide a stimulus for further broad-based revisionary studies, not only of sphecids but also of other insect groups. Similar treatments of other hymenopterous groups, at least, would be extremely useful, and insect systematists in general should be grateful for the lead given by these authors.

In view of the significance of this work, which will undoubtedly be regarded as the standard work on sphecids for decades to come, it is a pity that the authors have adopted such a conservative approach, both in methods