

tics of ecology would have included accounts of these efforts to change incentives through economic and judicial reform. Journalism can be accurate and responsible without pulling punches, as is regularly shown by Luther Carter's writing in this journal.

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Sociobiological Experiment

The Pill on Trial. PAUL VAUGHAN. Coward-McCann, New York, 1970. x, 244 pp. \$5.95.

Chronicles of the passing scene necessarily represent some degree of bias; the entire story cannot be told because it is not finished. Indeed each week sees some new development in the field of oral contraceptives, reported almost as frequently in the public press as in the biomedical literature.

A retrospective analysis of progress leading to our current array of oral contraceptives, principally combinations of estrogen and progestogen generically dubbed "The Pill," is no mean task. *Index Medicus* contains citations to a sizable fraction of the world's biomedical literature. Its annual cumulations grew about 30 percent between 1965 and 1969. During the same period the number of references to oral contraceptives tripled, and the number of citations concerned with their adverse effects in 1969 was at least as large as that of all titles on oral contraceptives included in the 1965 compendium.

Thus, Paul Vaughan faced a formidable job in organizing the biomedical sources alone, not to mention the numerous other pieces of information on this controversial subject. He acquits himself well in *The Pill on Trial*, a lucidly written small volume for lay readers. Vaughan is a good storyteller. His long experience with things medical (he has written a history of the British Medical Association and contributed shorter works on medical topics to an array of periodicals) has led to a facility for translating the highly technical jargon of the physician and scientist into a pleasant prose which draws from the different vernaculars appropriate to the occasion. But this work is not based on documentary sources alone. Vaughan has talked with a num-

ber of the principals. He quotes them directly so that their precise positions on particular issues are skillfully supported by their arguments. The pros and cons emerge on page after page, but the recurring theme is, "And yet, and yet—the doubts remain," "Nobody can be sure—yet," thoroughly and objectively skeptical.

The story commences in the days before and immediately after World War II with the fundamental observation that some hormones could inhibit ovulation. It gathers momentum with the advent of synthetic progestogens, the reawakening of an old interest in Gregory Pincus at the instigation of Margaret Sanger and Katherine McCormick, and the supportive clinical acumen of John Rock. The first field trials in Puerto Rico and in Britain raised new problems, which are paraded across the stage by a constantly increasing cast of characters. Experiences are faithfully recounted in rather more or less detail than some of the actors might prefer. The cast is large, and its geographical dispersion grows. The pros and cons are argued with scientific objectivity, sometimes with emotional fervor. Determination to obviate the consequences of a rapidly burgeoning population on this terrestrial sphere is aided and abetted by important segments of the world's medical professions and pharmaceutical industries. Known adverse effects of the pill in the form of unquestioned lesions produced in some fraction of its users are described, as are deviations from metabolic and behavioral norms less readily interpretable in terms of health and disease, and finally the potential hazards suggested by animal experimentation. To fortify Garcia's statement, "I have never claimed that the pill is the ideal contraceptive. There can never be an ideal contraceptive. Not unless you believe in Utopia," Vaughan introduces a number of alternative approaches to the problem. His epilogue demonstrates the intensity of feeling which discussion of the pill can generate, in the context of a recent hearing before the Monopolies Subcommittee of the Committee on Small Business, of the United States Senate.

The general public will find a wealth of information in this small volume. The scientific community may better understand from it the complex interplay of interests involved with the de-

velopment of the pill, and physicians may profitably contemplate some of the characteristics of their profession as perceived by a sympathetic but forthright author.

As for the author's bias:

The outlook for the pill has become darker. . . . Nevertheless, with all its disadvantages, steroid contraception looks like remaining a fact of twentieth century life for some time: but a fact which will become increasingly difficult to live with, as women continue to take their chance with the pill, though with a greater feeling of unease.

Meanwhile, without always knowing it, . . . twenty million women have been taking part in both an experiment and a gamble. . . .

Meanwhile the trial goes on.

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Island Epidemiology

Serendipity in St. Helena. A Genetical and Medical Study of an Isolated Community. IAN SHINE. With the assistance of Reynold Gold. Pergamon, New York, 1970. xvi, 188 pp. + plates. \$10.

St. Helena, a British colony, lies in the middle of the South Atlantic some 1200 miles west of Africa and 2000 miles from the coast of Brazil. It has a population of 4000 to 5000 individuals (4642 in 1956), most the descendants of slaves, indentured Chinese laborers, and past garrisons. Prior to 1815 and Napoleon's exile, the island was of little importance save as a refitting and provisioning point for sailing vessels. The six years of Napoleon's exile brought a brief period of international fame which, however, withered with his death, the opening of the Suez canal, and the replacement of sail with steam and oil. The winter of 1959–1960 witnessed a small turning in St. Helena's recent fortunes, the arrival of a new medical officer, Ian Shine. *Serendipity in St. Helena* is an entertaining, almost enthusiastic account of his introduction to human population isolates and an awakening of interest in their research potential. This small volume traces his involvement from chance observation of a few rare inherited abnormalities to an attempt at a larger and more comprehensive evaluation of the burden of inherited diseases and disability resident in the St. Helena population. He

carefully details his own missteps, as object lessons for others engaged in comparable studies, and punctuates his remarks with anecdotes and an occasional homily.

In the course of his two and a half years of residency, and as a result of examining the bulk of the island's inhabitants, Shine's interests focused upon four areas of investigation. These were the etiology of hallux valgus (the angulation of the great toe away from the midline of the body), ischemic heart disease, congenital and inherited disorders, and inbreeding. Pursuit of these does not necessarily require elaborate laboratory support, which was not available, and simple but astute clinical observations can still provide important insights. Some of Shine's results were foreseeable, but others not. Illustrative of the predictable was the finding that hallux valgus is more common among shoe wearers than among the barefoot. Unpredictable is the report that shoe-wearing is a more important predictor of the occurrence of ischemic heart disease than body weight or smoking habits. Ischemic heart disease appears to increase among St. Helenians with increasing years of wearing shoes. While the barefooted young may rejoice, one suspects this result reflects an unidentified confounding of extraneous variability.

Among the 4259 inhabitants examined between 1960 and 1962, Shine found some 535 instances of some 63 different congenital or inherited disorders (in this tabulation an individual is counted as many times as he has disorders). Included in this total are presumably all abnormalities "obvious on clinical examination, extensive enough to cause symptoms, and genetically determined." They range from the uninteresting (92 cases of pterygium) to Christmas disease (21 individuals) to familial St. Helenian fever, an acute febrile illness characterized by an unusual cellulitis of the leg. The last the author believes to be a genetically determined susceptibility to infection, although the evidence in support of this conclusion is not strong. Among the different diagnoses or disorders encountered are many that resist precise classification into genetic and nongenetic groups; however, as Shine aptly points out, comparisons of St. Helenians with other, larger populations are still possible and of interest.

In this respect, the St. Helenians have unusually high frequencies of generalized albinism, Christmas disease, and brachydactyly.

The weakest parts of the book are the final two chapters, one on inbreeding and the other an effort at synthesis. The inbreeding study described is a small touting of the ostensible superiority of sibling controls to other controls (in fact, 20 of 90 controls in the study were not siblings) and presents a point of view and choice of language that suggest the chapter was written in Hawaii. The synthesis proves to be merely a recapitulation of some of the findings and a somewhat superficial series of remarks on the founder principle, outbreeding, genetic drift, migration, mutation, and natural selection. The book concludes with a series of five appendices, tabulations of the age and sex structure of the portion of the population examined, an analysis of the water supplies on the island, of nutrition, comparisons of consanguineous spouses with nonconsanguineous ones, and finally an enumeration of the findings on the offspring of 45 consanguineous and 90 control matings.

Serendipity in St. Helena will undoubtedly find a place among the growing list of studies in depth on isolated human groups, but it is more likely to be remembered as a testimony to the drive, enterprise, and perseverance of its author than as a major contribution to human population genetics.

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British Limnology

Biological Studies of the English Lakes.
T. T. MACAN. Elsevier, New York, 1970.
xvi, 260 pp. + plates. \$13.

This volume fulfills very satisfactorily the author's aim of bringing together widely scattered data on one of the world's most thoroughly studied lake districts. For beginning students, especially in Britain, it should provide a stimulus to take up limnology, because Macan is exceptionally forthright in admitting the doubtfulness of many suggested causal relationships and in pointing out wide gaps in our knowledge of even the best-studied lakes and

groups of organisms. Established workers will find the book useful for the same reason. They will also enjoy reading for the first time a clear and coherent account of the physical, chemical, biological, and historical phenomena, the study of which in this region by members and associates of the Freshwater Biological Association has contributed so greatly to our understanding of lakes and their inhabitants. Some readers may join me in wishing that the book had been longer so that, for example, more than a single page could have been devoted to Mortimer's classic studies of the exchange of dissolved substances between mud and water, or to Lund's fascinating papers on the autecology of *Melosira*. Bottom organisms—particularly corixids—receive the greatest coverage.

The outline of the book is conventional, beginning with chapters on areal geology, lake morphometry, physics, and chemistry, and continuing with chapters on algae, zooplankton, rooted vegetation, bottom fauna, fish, sediments and lake history, bacteria and fungi, methods, and conclusions. The writing is clear, and the story is generally made as uncomplicated as possible. Errors are reasonably scarce and relatively obvious when present (but in table 14 the Esthwaite calcium concentration should be 1.4 mg/liter). Certain tables (5 and 12, for example) might be clearer in graphic form.

None of the English lakes is highly eutrophic, and so eutrophic lakes (and their problems) receive little attention. A few comparisons are made with Esrom Lake in Denmark, but others could usefully have been added from the meres of Cheshire and Shropshire. Little attention is given to lake productivity, largely because the FBA staff members—strong individualists in most cases—have been notably unconcerned with climbing on bandwagons. The lack of information is, however, to be regretted. Surface and stratigraphic studies of sedimentary pigments are not mentioned, although they probably bear as strongly as do Mackereth's studies of inorganic geochemistry on questions of present and past productivity. Moreover, they suggest that an appreciable part of the sedimentary organic matter in the most productive lakes may be autochthonous, contrary to the viewpoint espoused in this book.

The author's theme throughout the book is that lakes are better ordered in