sources — which are sprinkled lavishly throughout the book do not offset this criticism. These are of a highly subjective, anecdotal or testimonial nature and can, in no way, replace or substitute for objective factual data.

But Napier and Gershenfeld do not seem to be fully aware of this difference. The reader is confronted with a host of opinions and theories but is given no means of evaluating them other than through "trial-by-immersion" (i.e., by completing the skill exercises in each chapter). Other more scientifically legitimate methods of acquiring knowledge of group dynamics such as the use of Bales' *Interaction Process Analysis* are given only fleeting recognition.

But the real question here is: How do beginning students of group dynamics, without any ability to observe objectively and evaluate group processes and learnings (even *after* reading the appendix on "practical skills for facilitators"), and with little idea of the necessity for such, suddenly qualify as facilitators in order that they might do their "home-work assignments"? The fact that the authors seem to have no difficulty with this question is seriously disturbing.

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Paul Shephard & Daniel McKinley. ENVIRON/MENTAL: ESSAYS ON THE PLANET AS A HOME. Don Mills, Ontario: Thomas Nelson & Sons, 1971. 300 pp. $6.50.

R. H. Horwood. INQUIRY INTO ENVIRONMENTAL POLLUTION. Toronto: Macmillan, 1973. 116 pp. $2.95.

Among the many influences which eventually combined to establish in the mind of the American public an acute awareness of the delicate state of the world's ecology was the appearance during 1969 of a publication entitled *The Subversive Science: Essays Toward an Ecology of Man.* It was an anthology of articles by leading ecologists, sociologists, and economists, whose object was to accentuate the transitory nature of human activities when seen in the broader and more enduring matrix of ecological inter-relationships.

Environ/mental is its sequel. In this second collection by the same editors, Paul Shepard and Daniel McKinley, the emphasis is more on man himself. The essays are "intended to illustrate the scope of current environmental disorder and the variety of possible perspectives on it," and to this end are divided into four parts. The first of these deals with man in the natural environment, followed by the problems pertaining to human societies, particularly factors related to our increasing numbers; the articles in the third section are concerned with the values which determine human activity in the environment, and the last group covers some of the prescriptions offered for the more pressing environmental ailments. There naturally tends to be a good deal of overlapping as many of the papers were not originally written to be compartmented in this fashion. Besides the bibliographies contained in many of the individual essays, the editors have supplied, at the end of the book, an extremely generous and valuable reading list for each of the above sections.

While this anthology, like its predecessor, provides much useful reading, the impact of its possible educational contribution has been reduced with the passage of time. In short, if its object is to alert us to certain aspects of living in a healthy environment, well, fortunately we have already been alerted many times over. For our collective consciousness of the whole man-environment question has evolved considerably during the past three or four years, owing to the well deserved coverage it

has received in the press and on T.V. as well as through our own modest experiences of food and energy shortages. Moreover, the subject is now being given extensive attention in our schools, to judge by the level of sophistication of the educational manuals that are currently appearing. One such Canadian product is *Inquiry into Environmental Pollution* by R. H. Horwood.

Rather than provide yet another textbook abounding in information on ecology and pollution, Horwood has attempted to present more of a guide to the subject, with the intention of stimulating individual student investigation and class discussion of problems arising from the numerous ways we use the environment. Thus the form that the book takes is that of an outline of the function and dysfunction of ecological systems with the emphasis placed on the collecting and examining of material: "our goal is to provide a teaching book, one that asks productive questions and suggests helpful exercises." In this manner, it manages to touch on many related subjects that could not otherwise be included in its 116 pages. The contents are organized so that each of the chapters is more or less independent of the others, and the whole can be re-arranged and read in various sequences if desired. However, the route followed in the book is attractive in its subtlety.

The student is first acquainted with the basis of ecosystem organization and is introduced to the concepts of abiotic environment: producer, consumer, decomposer activity; nutrient cycling and energy flow. Three elementary ecosystems are discussed as examples and already we are made aware of the possibility of pollution in nature through the accumulation of organic matter and how, in turn, this is averted by the circular pattern of the process; in other words, the creation of pollution is a fact of living but ecosystems have evolved in such a way that the waste products of one creature provide sustenance for other organisms leading to the establishment of a dynamic balance between the principal components of the system.

Chapter Two discusses the role of water in the ecosystem and gives a general picture of the substance as solvent of both acid-bases and of gases. The vulnerability of water to pollution is illustrated in these terms: The upset of the acid-base balance by sulphur dioxide, and the reduction of the amount of oxygen held in solution when the water's temperature is raised, making it increasingly uninhabitable for those organisms with high-oxygen demands. Again, there is a strong accent of practical activity, with the more detailed and technical laboratory work assigned to the Appendix.

The third and fourth chapters return to the conceptual structure of the ecosystem of which the producer-decomposer relations are examined in greater detail, leading to the construction of a model of an imaginary ecosystem. In this hypothetical world there are only two components coupled together — a producer and a decomposer. However, each lives off the wastes of the other and, given a continuous supply of energy, the whole is theoretically capable of supporting itself indefinitely. That nature is not quite so simple is fairly obvious; why this is so is the subject of the remainder of Chapter Four. The smooth functioning of the imaginary ecosystem is complicated by the existence of consumers — animals who live off plant life (and off each other), using and re-arranging some of the constituent energy and nutrients of the vegetation before they are passed on to the decomposers. This is not to say that consumer activity need upset the balance of the ecosystem. On the contrary, in nature consumer activity lends itself to ecosystem stability by providing sufficient diversity to help reduce the effect of upsetting external influences. It is in this light that human activity in the ecosystem is studied. For humans too are consumers but their activities modify

the ecosystem far more than those of other animals and tend to reduce this diversity, sometimes intentionally but more often in ignorance.

The final chapter is perhaps the most impressive as it succeeds in covering, albeit too briefly, a variety of topics which effect human impingement upon the natural environment. On the philosophical side, our rather woolly notions of "independence" together with our cherished ideals of economic growth, are shown to appear ridiculous when viewed in the ecological context; and, rather ironically our recently renewed interest in wildlife is itself seen as a potential threat to the environment in that the facilities set up to accommodate "nature lovers" often result in an increased pressure being brought to bear on what little is left of the wilderness. In the more practical vein, various types of conflict over use of the environment are examined, such as the use of land for food production as opposed to the accommodation of urban sprawl, or the use of bodies of water for sewage disposal versus their use as sources of fresh water both for industry and recreation. Most importantly, the political and economic implications of these conflicts are underlined.

The only drawback to this otherwise most commendable little book is that it might be rather difficult to fully appreciate without sufficient familiarity with ecosystem dynamics. But, then, as the author has informed us, there are numerous texts already available to provide this.

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Joe L. Frost.
REVISITING EARLY CHILDHOOD EDUCATION: READINGS.
New York:
Holt, Rinehart and Winston, 1973.
548 pp. $7.50.

Practising teachers of young children usually like to read new publications on the subject of early childhood education. They want to discover whether the book will shed a realistic light on the education of young children in the modern classroom or whether it will bamboozle the interested reader with theories, measurement analysis and experimental situations. It is reassuring to find that Joe L. Frost's *Revisiting Early Childhood Education*, a new series of readings following-on from his earlier 1968 publication *Early Childhood Education Rediscovered*, is a comprehensive view of the developments since the mid-60's both in theory and practice.

In his book, Frost has taken "early childhood education" to mean a wide range of opportunities from day-care and community health and care programs to preschools and public kindergartens. The book is in eight sections each with an introductory review of the reading to follow. The 51 contributors deal with the rationale behind early childhood education; settings for programs; the input into this field from Montessori and Piaget; child-development in the spheres of cognitive, affective, conative and play learning; language development; Head Start, open schools and free schools; and a final section on the practical aspects of planning, analyzing and evaluating early childhood programs.

The progression of ideas through the readings allows the reader to come to the same conclusions as the teacher in the classroom. There must be more questioning regarding the ways young children learn and are evaluated — this comes out in the stimulating pro-and-con arguments of Greenfield and Bruner versus William Labov in the language development section and the heart-searchings about the effectiveness of open and free schools by Paul Goodman and Jonathan Kozol. "It is clear that our ideas about teaching are inadequate, but is it possible that they are simply false?" (Stretch p. 470)

A teacher is also reassured to