examples from its author's vast store of biological and literary knowledge.

Huxley gives as the most remarkable development of the present century "man's unveiling of the face and figure of the reality of which he forms a part, the first picture of human destiny in its true outlines." He feels that "the most important, if not the most urgent task of our times, is the development of a new set of integrated, directive and transmissive mechanisms for human societies and for their continuity down the generations." He criticizes the Marxian system and the behaviorists on the one hand for trying to deny the validity of the mental and spiritual elements in the universe and, on the other, the mystics, the idealists, and the theologians, some of whom try to deny the importance of the material elements. Man must, he says, learn how to think in terms of organization and pattern, and in terms of trend and process.

Most of the essays have appeared in print over the past seven years as lectures and general articles, although some are here considerably expanded. There are minor repetitions in the book, and somewhat closer editing would have reduced the impression that the author produces a new volume whenever the storage bin of lectures and articles gets filled to appropriate depth. Thus, the essay entitled "Knowledge, morality, and destiny" starts out, "Our Western world in this year 1951 is psychologically in a bad way."

But it is all prime Huxley, which is very good indeed, quoting Walt Whitman or Darwin with equal facility, free-ranging, sparkling, imaginative, comprehensive, factual, speculative, interesting, and stimulating. It is good to have these essays under one cover.

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Exotica. Pictorial cyclopedia of indoor plants. Alfred Byrd Graf. Roehrs Company, Rutherford, N.J. 1958. 4000 illus., 644 pp. $17.50.

The last two decades have seen a revolution in the way tropical and subtropical plants have been introduced into cultivation in the temperate zone. Glass-sided homes, fluorescent lighting, plastic glass, and air-control equipment have made it possible for millions of Americans to live with tropical plants throughout the year if they so desire. The five-day week has brought to people with lively minds the need for more absorbing hobbies. The rise of mass-production ornamental horticulture has been one of the results. The gardens and the jungles of the tropics and subtropics are being combed for likely plant material.

A little-known species or hybrid of *Peperomia* or *Syngonium* may now be in mass production within two years from the time it was first collected in the back corners of Brazil. There are already over 150 species and varieties of *Philodendron* in cultivation in this country; hybridization programs are well under way which will multiply the number of named varieties in another decade. The total national business in African violets alone, I am reliably informed, now grosses more than all the nursery business in temperate and tropical fruits, apple trees, peach trees, current bushes, avocado trees, and so on. The poorly known genus *Schefflera* was of so little commercial importance when the last edition of Bailey's *Manual of Cultivated Plants* was being planned that it did not even qualify for admission. Today the production of large tubbed specimens for glass-sided office buildings has become big business. One can scarcely stroll through the business district of a city in the eastern United States without seeing a *Schefflera* (or near-*Schefflera,* for the precise limits of the genus have not yet been worked out) in a bank or cafeteria.

This trend is the raw material of social history; it is changing various kinds of attitudes towards plants and towards their cultivation and study, in all classes of society in the United States. Eventually our technical, botanical and horticultural works will catch up with this flood of new introductions and reduce to some kind of order their identification, history, and significance. Until then, the amateur, the social historian, the horticulturist, even many taxonomic botanists will get their most immediate help out of Graf's remarkable book. Most systematists who give their concentrated attention to the sections of the book dealing with their own specialties will wince at the inaccuracies they find; many of them, however, will learn to use the book as an effective first approach to the other fellow's specialties. That anyone should have been able to survey this rapidly growing flood of exotic plants is a marvel; that a busy executive like Graf should have produced this 644-page compendium approaches the miraculous. He is the manager and a director of the Roehrs Company of Rutherford, New Jersey, one of the principal dealers in and growers of this kind of plant material.

The chief feature of the book is some 450 pages of clear photographs illustrating close to 4000 of the species and varieties of tropical and subtropical ornamental plants. There are indices to common names and scientific names, a glossary of botanical terms, short semi-technical descriptions, a section on pest control, and a discussion of the climates from which these plants came, complete with a climatic map of the world. There are short introductory pages on the care of house plants (don't overfeed and don't overwater!) which are of more practical help to the average intelligent person than most books on the subject.

One of the most valuable features of the book is a 40-page summary of the kinds of places where these plants have been collected. There are on each of these pages three or four of Graf's excellent photographs showing the deserts and jungles, the temples, gardens, and nurseries from which ornamental plants have been gathered. Graf's comments supply an effective summary of the conditions under which ornamental plants are being grown in various parts of the tropics, as well as considerable insight into why they are being grown and the various ways in which they are being used. Since he has traveled and collected throughout the tropics with an inquiring mind and a good camera, he has unwittingly produced our first compendium of tropical man's attitudes towards plants.

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L'Enfant Néanderthalien du Pech de l'Azé. Etienne Patte. Masson, Paris, 1957. 234 pp. + viii plates. Illus. Paper, F. 2500.

The infant which is the main subject of this impressive study is represented by only an incomplete skull and lower jaw. Not indicated, but also included (pages 197–226), is the description of another Neanderthal infant (from Chateauneuf-sur-Charente) represented by only a fragment of mandible. Both specimens were between 2 and 3 years of age; they were discovered nearly a half century ago by Peyrony and Chauvet, respectively. The second specimen is so little known that it was not included in the *Catalogue des Hommes Fossiles* (Vallois and Movius *et al.,* 1953).

Reading soon reveals that this report is padded with somewhat irrelevant and outmoded data. For instance, the presence of ununited frontal bones—a normal feature in infancy—is used as an excuse for a 3-page dissertation on metopism in adult human beings and in other primates. Here the references go back to 1885.

The author, who is dean of the faculty of sciences at the University of Poitiers, does not clearly separate information about his own specimens from that of the authorities he cites. In fact, on going through the nearly five pages on the status of the sutures, I find less than a

dozen scattered lines (sometimes only clauses) describing the Pech de l'Azé specimen. This does not mean that the new information is scanty, for later on 53 measurements and 26 indices are listed for the skull, and these are discussed at length in 26 pages of text!

Really, this is a very welcome addition to our knowledge, and my complaint is not about the amount of information provided but about the way in which it is presented. The reader will find it very difficult to piece together the descriptions of the two infants. Some of the space might better have been used for the illustrations. The eight plates are overly crowded, and this makes the individual pictures too small. Besides, the legends for the plates are too brief.

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The Testing of Negro Intelligence. Audrey M. Shuey. J. P. Bell, Lynchburg, Virginia, 1958. 351 pp. $4.

Representing the most exhaustive literature survey of the intelligence-test performance of American Negroes yet attempted, this book covers over 300 references that appeared between 1913 and 1957. Of these, approximately 170 are published reports of original investigations, 71 are unpublished master's or doctoral dissertations, and the remainder include reviews, critiques, and other interpretative discussions. Except for one Canadian and one British West Indies study, all data were obtained on Negroes living in the United States. Research results are presented in the form of summary tables and text discussion, one chapter being devoted to each of the following: young children (primarily in nursery schools and kindergartens), school children, high-school and college students, the armed forces, deviates (including gifted and retarded), delinquents and criminals, racial hybrids, and selective migration. All varieties of intelligence tests are covered, including group, individual, verbal, nonverbal, performance, and "culture-fair." A few studies utilizing multiple-factor batteries, such as the tests of Primary Mental Abilities, and special aptitude tests, such as the Minnesota Paper Form Board, are likewise reported.

Despite the meticulous care with which minutiae were ferreted out, the treatment of certain studies may be such as to create misleading impressions. For example, in discussing D'Angelo's study (pp. 12, 16, 22), in which no significant Negro-white difference in Draw-a-Man IQ was found, Shuey concludes that the results are uninterpretable because the subjects were selected by nursery directors and did not comprise all cases meeting the age and language specifications. In actual fact, *all* children who met these two requirements were tested, the nursery directors merely providing the names of those who fulfilled these specifications. It is also difficult to understand why reference is made to D'Angelo's unpublished dissertation but not to the later article, by Anastasi and D'Angelo in the *Journal of Genetic Psychology* (1952), which covered more cases and provided more refined statistical analyses. Similarly, in discussing a study by Boger (pp. 68, 77, 110, 122–3), Shuey fails to mention that intelligence-test scores of Negro children improved more than those of whites as a result of perceptual training. Only the performance of both groups prior to training is reported.

On the whole, Shuey's survey serves only to document the old familiar finding that whites usually excel Negroes in mean intelligence-test scores, although overlapping is extensive and all levels of test performance can be found in both groups. With these purely descriptive facts few psychologists have ever taken issue. The major differences have centered around interpretation. Although Shuey concludes that the data "point to the presence of some native differences between Negroes and whites as determined by intelligence tests" (p. 318), few of the studies shed even a glimmer of light on causal factors, and their results are at least equally consistent with an environmental interpretation of group differences.

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Agricola on Metals. The age of technology waited for better and more abundant metals; it arrived so much sooner because Agricola published *De Re Metallica,* a mining and metallurgical classic. Bern Dibner. Burndy Library, Norwalk, Conn., 1958, 128 pp.

Bern Dibner celebrates the third International Geophysical Year by reducing to a 100-page summary the 600 pages of the Hoovers' translation of *De Re Metallica.* He has presented a straightforward statement of Agricola's observations and theories in their historical context, the Hoover footnotes being, in effect, incorporated in the text. His introductory chapters provide a neat defense of Agricola and his works.

There is much to be said for digesting a classic such as *Agricola* in order to make available a complete presentation of the text for those who otherwise find the Hoover volume inaccessible or too expensive, or who seek information about the background of the well-known woodcuts; but it is hoped that *Agricola on Metals* will not entirely replace *De Re Metallica* on the reference shelves, since it would be a pity if the painstaking scholarship of the Hoovers were forgotten.

The plates reproduced are well chosen and representative, though they would have been improved if Dibner's useful explanatory notes had been added to the original captions.

I would question Dibner's explanatory subtitle and ask, How much sooner did the age of technology arrive because Agricola published *De Re Metallica*? Before the Hoovers revived the book in 1912, there had apparently been no edition of *Agricola* since 1687. The German translation prior to that of 1928 was, according to Hoover, "a wretched work by one who knew nothing of the science" and who was clearly unqualified to unravel the technical mysteries of the original text. *De Re Metallica* could hardly have been a vade mecum for the practical man, even in Germany. If it had been popular, one would expect to find a record of frequent republication and revision, just as Andrew Ure's *Dictionary of Arts, Manufactures and Mines* was kept more or less up to date in the early days of the 19th century. No evidence is presented by Dibner that this happened. One suspects that while *De Re Metallica* now provides us with a useful account of the state of the art at the end of the 16th century, the work had little or nothing to do with technological progress of the period. Though it may have helped to spread knowledge of the operating techniques described, the more aggressive miners and smelters probably went on with their job of improvising, modifying, and sometimes innovating, little affected by Agricola's report. There is room for more research in the history of 17th- and 18th-century mining and mineral processing before it can be confidently assumed that Agricola did, in fact, accelerate technological advance.

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Applied Differential Equations. Murray R. Spiegel. Prentice-Hall, Englewood Cliffs, N.J., 1958. xv + 381 pp. Illus. $6.75.

This book would serve, and serve well, as a text for a beginning course in elementary ordinary differential equations. The usual special types of first and higher ordered equations are treated. Single and simultaneous equations with constant coefficients come next; then series solutions and a brief chapter on