in the presentation of data is necessary. This does not make for easy reading, but the numerous, clear diagrams facilitate this, and the author has carried out his task well. In the result, this detailed study of a great geosyncline is of importance not only to American geologists, but also to all who are interested in the origin, composition and structure of such major features of the Earth's crust.

The book is provided with a selected bibliography to each section as well as a comprehensive bibliography at the end. It is well produced and clearly printed.

H. DIGHTON THOMAS

TEXTURES IN SHEET METALLURGY

Textures in Metal Sheets

By Dr. F. A. Underwood. Pp. xii + 148. (London: Macdonald and Co. (Publishers), Ltd., 1961.) 28s. net.

THE technological importance of texture has recently been emphasized by several new developments. Twenty-five years ago anisotropic properties became commercially useful in silicon-iron transformer core material; about six years ago cube texture was also produced in this alloy. Furthermore, in this past six years many details of processing have become known generally. Less common metals, such as bismuth and uranium, are being used commercially; there is strong interest in their anisotropic properties, particularly where they are subjected to cyclic heat treatment.

Control of texture is important and might arise, for example, through alloying, by the control of a separate phase or by the control of the annealing atmosphere. Much of the information on these aspects has become known recently. While this is not covered in any detail by this book, it does give a useful introduction to the subject. The book is intended either for beginners, who hope to get more involved in the detail, or for those with peripheral interests such as managers, who primarily want to understand results in investigators' reports. Nevertheless, a small extension to the book would have presented a more complete, up-to-date and useful contribution. The lack of very recent references is apparent in several instances.

The elementary level of starting is clear from the introduction and first chapter on preferred orientation. Efforts to keep the book short are laudable but might leave some bewilderment; for example, When are Wulff or stereographic nets used? Methods for determining pole figures are very well described, with the exception of optical techniques. It should be pointed out, however, contrary to p. 55, that instruments are available commercially for constructing pole figures.

Textures are discussed in separate chapters for rolling and recrystallization. They are good summaries but omit some important points. The author pointed out that the work of Bishop and his colleagues gave a reasonably rigorous treatment of rolling textures, but otherwise gave it only a brief mention. The effects of alloying, impurities and atmospheres on recrystallization textures are almost completely ignored.

The last chapter on anisotropy reports measurements on mechanical properties. Earing is discussed in detail. Only in the last few pages is the torque magnetometer mentioned. This is surprising since it is such a useful tool.

It is easy to criticize somebody else's efforts, but it should be clear that most of these comments imply that the book should be longer and more expensive. In fact, the author is to be congratulated on keeping size and cost down to a level at which students can afford to buy it. It is a useful starting point for students in this field; all metallurgical libraries should have a copy.

G. M. LEAK

LIFE: NORMAL AND ABNORMAL

La Vie

Par Jean Rostand et Andrée Tétry. Pp. 468 (960 illustrations). (Paris: Librairie Larousse, 1962.) n.p.

ANYONE glancing through this comprehensive, abundantly illustrated and well-produced volume could be forgiven for thinking life was very odd. Scarcely a page is passed that does not contain a picture of the abnormal, from the slightly unusual to the chimerical. So we run the gauntlet from the inevitable mutant *Drosophila* through Siamese twins, the two-headed newt and fork-tailed lizard to albinism and children born with neither hands nor feet. Since the natural freaks are relatively limited, there is a strong reinforcement of the monstrosities produced by selective breeding, experimental zoology and the nuclear device exploded over Hiroshima.

This macabre display of pictures seems scarcely in keeping with the sober and well-informed textual matter, and there may be two reasons for this apparent emphasis on the teratological. First, as every student of taxonomy knows, it is often the exception that sheds more light on, or even lays bare, the truth about the common run. Secondly, as the anatomist and the morphologist have learned, and the behaviourist is beginning to learn, the exceptional or the abnormality is more common than the text-books would lead us to believe. Perhaps there is a third reason, that when the life sciences are treated as exhaustively as they are here there is bound to be a fair proportion of space devoted to these freaks.

Another unusual feature of the book, which has everything to recommend it, is that not only are the various evolutionary theories set forth but so are the arguments against them, even those against the most orthodoxly acceptable. Nothing could be fairer. It is this, perhaps more than anything else, that reveals the true purpose of the book: to bring together within a single volume, as objectively as possible, knowledge that elsewhere tends to be spread over many publications and which, as often as not, reflects the bias of a particular author. The specialist scientist no less than the untutored layman wishing to be abreast with present-day knowledge and theory can expect to find in this book the answers to questions outside his competence. In this, the text is no disappointment. It begins with morality and religion, passes to the consideration of the living cell and the latest knowledge on this important topic, proceeds to sexuality, growth and development, senescence and death, regeneration, the many aspects of genetics, evolution, including that of the Homiidae, and ends with some speculations on the future of the human race. One can but envy the authors their erudition—or the amount they must have learned in compiling the volume—and congratulate them on the fruits of their labours.

MAURICE BURTON