

discipline is harsh or over-indulgent. A second group of conditions may be classed under the head of "opportunity for mischief": 30 per cent of the sixteen-year-old delinquents were unemployed, and one third of the offences committed during the hours of darkness. Yet these are by no means the only factors, since—particularly perhaps during periods of stress or disturbance—normal boys from normal homes may occasionally succumb to what the writers call 'stray or chance' delinquency.

Although many problems are admittedly left unsolved, the publication of this carefully conducted research, demonstrating the unquestionable influence of social and domestic factors, is particularly opportune. Of late there has been an increasing tendency, particularly among medical writers, to revive the ancient view that 'crime is essentially a form of mental illness'. The present report throws the onus of proof on those who advocate the pathological hypothesis: it now becomes incumbent on them to support their view, not merely by impressions gleaned from the study of individual cases in the clinic or the consulting-room, but also by a statistical analysis of data collected with equal care. The present investigators suggest three main lines for future inquiries: first, further statistical studies of the various environmental factors, to be carried out, not spasmodically, but continuously or at regular intervals; secondly, an intensive study of the psychological aspects with particular reference to susceptible types; thirdly, a supplementary study of the relative efficacy of different methods of treatment. Only on the basis of cumulative scientific researches can practical measures be laid down.

CYRIL BURT.

## THE AIRMAN'S LABORATORY

### Weather

An Introductory Meteorology for Airmen. By W. G. Kendrew. (Oxford Air Training Manuals.) Pp. 96. (London: Oxford University Press, 1942.) 2s. net.

THE author of these hundred pages addresses himself to the airman student who comes fresh to meteorology and has little knowledge of physics. That is not an easy task—no good elementary textbook is—and great success has not been achieved in this instance. Nevertheless, the author's aim is sound: to present a limited factual survey of the physics of the troposphere, the medium in which the student will in the main be flying, and, so that the book shall be more than an exercise of memory, to attempt some correlation of the facts themselves. No mathematics is used in the process.

Atmospheric dynamics and thermodynamics are not, within the scope of this book, essentially difficult. But they are complex, and school laboratory experience is not easily extrapolated to a large three-dimensional domain in which air does not necessarily move from a region of high pressure to one of low pressure, nor is its readiness to turn upside down determined by an increase of density with height. It is therefore due to an author, so far as present knowledge and his self-imposed limits allow, to be particularly explicit on the conditions of Nature's experiments which he is describing. One could have expected greater clarity in many instances here.

Thus a clear night atmosphere is a by no means ineffective blanket in checking loss of heat from the earth (about a quarter only of the earth's radiation is allowed to escape), though a layer of low cloud is certainly a more effective blanket; the absolute humidity of air which is heated does not in general remain constant; temperature inversions are essentially of two kinds, both in mode of formation and in effect, at the surface and in the free air, and the distinction is not clearly drawn.

There are excellent concise statements on air masses, pressure systems and the synoptic weather chart, and the author has nicely stressed the importance of the actual physical qualities of the air 'on the stage' rather than the label which has been attached to it. The new student of the subject should gain a good deal from the book, but will need to read further if his ideas are to be really coherent and if he is to get the best out of the meteorological advice which as an airman he is offered.

## DEFECTS OF SPEECH

### Speech and Voice

Their Evolution, Pathology and Therapy. By Dr. Leopold Stein. Pp. xii+233. (London: Methuen and Co., Ltd., 1942.) 15s. net.

IN this elegant and well-documented study, the author uses a life-time of clinical experience and a highly developed critical faculty when discussing the cognate work of others. As befits a member of the Tavistock Clinic, the only large body of consultative and practising psycho-therapists in Great Britain, the author sees in the development of speech in the individual a parallelism to the development of the body through a compressed re-capitulation of the evolutionary development of the species through the ages. Thus, from the very first id cries of the baby every further stage of speech control, as a method of communicating ideas, is but adding a further layer of psychological development on what is more primitive. Conversely, the major defects of speech, representing loss of such higher layers, such as aphasia, dyslalia, and stammering, are treated by conducting the patient through a vocal training largely based on the evolution of language, deduced by the comparative study of primitive languages and the natural efforts of an infant in endeavouring to make his wants understood; this, of course, in addition to any *ad hoc* psychological treatment.

In the author's comparatively condensed treatment of his subject he is exceptionally clear in his definitions and meanings of the technical terms he uses; in some instances he seems to overstress derivations of words, because we know that verbal meanings tend to change as their subjects develop. But vocal chords is surely an archaic spelling.

Ostensibly for speech therapists, nevertheless the present text has considerable use for the general scientific reader, especially as the author deals with related phenomena, such as organic troubles, breaking of the voice, laryngectomy and speaking with the aid of air from the stomach, and vocal exercises. The main feature is the psychological approach to speech defects, and the new hope given to sufferers by modern methods of treatment.

L. E. C. HUGHES.