

above the dark line of the hills, or who does not recognise this imagery to symbolise the whole beauty of a sparkling winter evening—when, may be, one is walking along a country road over the crackling puddles. But there is, further, local colour behind the imagery in question. I can never read the line and a half beginning with "Like an untended watch-fire" without experiencing a vivid sense of the stern background of the Cumberland fells, and of the various moods of that northern climate to which the lakeland hills are so exquisitely attuned. Had Wordsworth been reared in some other part of England equally beautiful, only different, would this have been reflected in the general character, apart from local concrete imagery or topographic detail, of his poetry? To some extent one may, I think, infer this; but in such deep aspects of human geography it is necessary to exercise the utmost caution, for we know little of the influences which affect the human spirit or in what direction they may act.

L. C. W. BONACINA.

27 Tanza Road,
Hampstead, N.W.3,
January 31.

The Arabic Text of Avicenna's "Mineralia."

THE production of spurious books on alchemy, claiming to be translations from the Arabic, was undoubtedly practised on a large scale in the Middle Ages. An unfortunate result has been that modern scholars are inclined to view with grave suspicion all Latin chemical treatises which pass under the names of Arab authors, and have thus inevitably rejected many books which are genuinely what they profess to be. An interesting case in point is provided by the tract entitled "Mineralia," ascribed to Avicenna and printed in Manget's "Bibliotheca Chemica Curiosa," 1, p. 636, and elsewhere. This was rejected as a forgery by Kopp ("Beiträge zur Geschichte der Chemie," 3, p. 56) and others, though Hoefer ("Histoire de la Chimie," second edition, 1866, 1, p. 345), with a truer insight, regarded it as genuine.

A careful study of the tract convinced me that Hoefer was right, and after a prolonged search I was fortunate enough to discover the Arabic text. The "Mineralia" is, in fact, a close translation of certain sections of a work by Avicenna which is undoubtedly authentic, namely, "Al-Shifā," manuscripts of which occur in the British Museum and many other libraries. Since Avicenna's views on alchemy (he was a pronounced opponent of those who maintained the possibility of transmutation) exerted a great influence upon contemporary scientific thought, it has been considered desirable to publish the Latin and Arabic texts together with an English translation; this edition is now in course of preparation.

E. J. HOLMYARD.

Clifton College, Bristol,
February 7.

Intrinsic Brightness.

THE intrinsic brightness of sources of light seemed at one time to be a simple matter, namely, $2\frac{1}{2}$ candle-power per square inch for a candle-flame, 200 to 450 for a carbon filament lamp, 1000 for a tungsten vacuum lamp, and 80,000 to 110,000 for an open electric arc. The areas were the simple measured projected areas of the surfaces.

The question arises, however, whether those areas should be taken. The apparent diameter of a modern intensely incandescent filament is greatly increased

by irradiation. The fine spiral filament of a gas-filled lamp appears, visually, to be a very thick filament. The bunch of straight up and down filaments of a tungsten vacuum lamp appear, at a little distance, to be a uniform incandescent patch of many times the area of the filaments, and would be indistinguishable from a flat uniformly incandescent surface of the same apparent area. Considerations of comfort, to say nothing of possible injury to the eyes by too great intrinsic brightness, have become important. Opal glass bulbs absorbing an unimportant fraction of the light, are being used for the purpose of increasing the apparent area, and thus reducing the intrinsic brightness. The definition of this quantity appears to be one for physiological or ophthalmic consideration, rather than for simple physical measurement. If the apparent area is to be taken, how is it to be measured? Is it subjective or objective?

A. P. TROTTER.

Greystones, Teffont,
Salisbury, February 5.

Neglected Early Scientific Instruments and Apparatus.

LIKE many other readers of NATURE, I have been greatly interested in the extracts from the early records of the Royal Society and the Philosophical Society at Oxford which have been appearing in its columns. Those recently published illustrate and supplement Mr. R. T. Gunther's "Early Science at Oxford" and bring into relief the pioneer work done in every department of experimental science by graduates of Oxford and Cambridge during the seventeenth century.

As an old curator I know how many unregarded "rarities" are still stowed away, neglected and forgotten, in the cupboards and corners of every local museum throughout the country. I would suggest to those in charge of such museums that they should look through their "lumber" to ascertain whether there are any pieces of scientific apparatus which should again see the light. This was done with brilliant success at the colleges in Oxford in 1919, and the Ashmolean has, in consequence, come into its own again. I feel sure that a more extended search would lead to even greater results, and if the finds were reported to Mr. Gunther he would make a note of them, and it might be possible to gather them together as a loan exhibition.

D'ARCY POWER.

Cirsium eriophorum.

IN NATURE (November 14, p. 711) Mr. Stuart Thompson alludes to the woolly-headed thistle—*Cirsium eriophorum*—being found at Chewton Keynsham, and remarks that it was from specimens gathered there in 1922 that Dr. Petrak named it sub-sp. *britannicum*. As a matter of fact, Dr. Petrak monographed the genus in 1912 ("Bibliotheca Botanica," Heft 78, Stuttgart), which I reviewed in the *Report of the Botanical Society and Exchange Club*, 361, 1913. There Petrak describes seven subspecies, and he chose an inept name (*Cirsium britannicum*), since *eriophorum* is limited to England (Sibbald's Scottish record was erroneous), and there was already *C. britannicum* of Scopoli, but that is *heterophyllum* and therefore invalid. So far from the subspecies being due to a Somerset specimen, Petrak's details of his drawing are made from a Huntingdonshire plant.

G. CLARIDGE DRUCE.

Oxford.