which consists almost entirely of abstracts of any articles, papers, etc., connected with scientific instruments which appear in technical and scientific publications throughout the world. Of course, the abstracting service does not have a fixed and precisely defined subject-field, for the selection of material depends on, among other factors, the interests of the changing membership of the Association, the extent and availability of other sources of information, and the trends of interest revealed by inquiries made by staff who do the abstracting; consequently, a subject may be more fully covered during one period than in another. The *Bulletin* has grown with the years and has now achieved a reputation of filling a very real need and of doing so with considerable adequacy. Its functions are twofold, the first of which is to provide readers each month with a survey of current scientific publications on subjects of interest to them, and in this connexion it is best read like any other periodical review, that is, regularly and as soon after publication as possible. But it may not be realized in some quarters that, by virtue of its annual indexes, the *Bulletin* also serves as a permanent source of reference; indeed, the accumulated copies of the *Bulletin* and its indexes probably provide one of the easiest means of finding information which is related to scientific instruments and has been published within the past six years. All inquiries relating to these abstracts or to scientific instruments in general should be addressed to the Information Department, 'Sira', Southill, Elmstead Woods, Chislehurst, Kent (see also p. 1007 of this issue).

The Air Almanac

The British "Air Almanac" and the "American Air Almanac" have now become a single publication under the title "The Air Almanac", which will be published three times yearly, each issue containing the requisite data for four months. The first issue of this joint enterprise is for January–April 1953 (Air Publication 1602; pp. 242+56. London: H.M.S.O.; Washington, D.C.: U.S. Naval Observatory. 1952; 10*s*.). It is produced jointly by H.M. Nautical Almanac Office, the Royal Greenwich Observatory, and the Nautical Almanac Office, United States Naval Observatory, but it is printed separately in England and in the United States. Although the unification of the two former publications has necessitated a number of minor changes in both, these will be obvious to those who use "The Air Almanac", and navigators who have been familiar with either almanac will find no difficulty in using the new production. Very full explanations are given, and in order to make the almanac more satisfactory for international use a list defining the symbols and abbreviations that are used is given in English, French and Spanish. The International Civil Aviation Organization accepted the new publication as the basis of an international air almanac, and it seems probable that it will be reproduced, with language changes, in France. It is hoped that it will eventually become international.

Preservation of a Saxon Wooden Bucket

In the October issue of the *Museums Journal*, Dr. A. A. Moss, of the Research Laboratory of the British Museum, relates with illustrative photographs the remarkable achievement of the preservation of a Saxon bronze-bound wooden bucket with an iron handle. The bucket, when found in Wiltshire, consisted of water-logged staves of yew maintained in position by wet chalk. The four bronze bands were broken. The bucket was immersed in water to prevent shrinking and the chalk removed. The wooden staves were found to be very fragile and the bronze bands corroded. It was deemed necessary to take the bucket to pieces and treat the wood and bronze separately. The corrosion products were removed from the bronze bands and from the supporting strips by electrolytic reduction in a 5 per cent solution of sodium hydroxide. This loosened the rivets, which could then be easily removed. After soaking in water to free from chloride, the fractured edges were joined with soft solder. To preserve the shape of the wood it was decided to replace the water in the cells by alum. Eventually, after drying, the surface of the wood was painted with a dilute solution of cellulose nitrate. In re-assembling the wood and the bronze, a circular bottom for the bucket was made out of 'Perspex'; this fitted into the grooves in the staves. 'Durofix' was used for re-assembling the wooden portions.

The Post-fledging Dispersal of Juvenile Titmice

The post-fledging dispersal of juvenile titmice was studied by Ivan M. Goodbody in the summer of 1950 in a piece of mixed deciduous woodland near Oxford (*British Birds*, 45, No. 8; August 1952). 248 young bluetits and 191 young great tits were marked with a colour ring on each leg, so that all the birds hatched in the study area could be identified as such, wherever seen. Regular counts of the number of ringed and unringed tits were made in the study area and in a strip of woodland outside it, and showed that an explosive dispersal of young birds takes place within a week or two of leaving the nest; thereafter birds continue to move outwards from their birthplaces. A marked rise in the percentage of unringed juveniles both in the study area and in the outside area in mid-August indicates the possibility that there may be a passage of juveniles at about this time. While no ringed birds were found in a large woodland area one mile away, several were located in low-lying water meadows half a mile away.

Solanaceous Alkaloids in Normal and Grafted Plants

In normal plants of *Atropa belladonna* the ratio of hyoscine to hyoscyamine is approximately constant at a value of 0·12, irrespective of the total alkaloid present in the plant, the part of the plant analysed, or whether the plant is aged or starved. By contrast, in the normal plants of *Datura innoxia* this ratio is high (average 9·71; tap roots 13·81–17·36; other parts 4·6–9·8). In grafted plants the scion always contains the alkaloids in the proportions characteristic of the plant used as stock, not in those of the scion species. It thus appears that the alkaloids are synthesized in the roots, particularly in the young growing tips, and that they are transported unchanged, probably in the transpiration stream, into the shoot. These results have been obtained using partition chromatography, the extracts tested being of plants into which no foreign alkaloids had been introduced (see G. M. James and B. H. Thewlis, *New Phyt.*, 51, 2, 250; 1952).

A Lower Devonian Charophyte

A new species of *Trochiliscus* (Charophyta) from the Downtonian (Lower Devonian) of eastern Europe, described and illustrated by some good photographs by W. N. Croft (*Bull. Brit. Mus. Nat. Hist.* (Geology), 1, No. 7, 1952), probably affords the earliest reliable