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THE series of Early Chellean hand-axes found during 1924 by Mr. Reid Moir upon the foreshore, and in a deposit representing the base of the Cromer Forest Bed, at East Runton and elsewhere on the Norfolk coast, is now being exhibited in the Museum at Ipswich, and the specimens can be examined by any one desirous of doing so. The early flint implements of East Anglia are now arranged in the following sequence, which illustrates the succession of human cultures in Late Pliocene and Early Pleistocene times, namely, (a) specimens of Harrisonian eolithic type, (b) pre-Chellean forms from beneath the Red Crag, (c) Early Chellean hand-axes from the base of the Cromer Forest Bed, and (d) Chellean, Acheulean, and Mousterian implements from various deposits in Suffolk and Norfolk.

THE Soviet Government of Russia has taken steps to protect the *zubr* or European bison, and incidentally other rare forms of life, in the Western Caucasus, by declaring an area of about 250,000 dessiatins, or approximately 625,000 acres, a reserved area under the control of a special official with the title of *zubrovni zapovednik*. Within this area "all activities damaging the natural relief of the surface, such as the felling

of timber, pasturing of cattle, opening of quarries, etc.," are forbidden.

THE Cambridge Instrument Co., Ltd., have issued a new list, No. 194B, dealing with thermoelectric pyrometers. The catalogue deals in succession with general principles, indicators, recorders, thermocouples, cold junction control, and pyrometer tester. The latter is a compact form of potentiometer suitable for checking the accuracy of any type of thermoelectric potentiometer. An interesting item is the new thread recorder, which is enclosed within a robust moisture and fume-proof metal case instead of the customary teak cabinet. Recorders of this type are supplied making up to six records on one chart. These may include records of temperature, carbon dioxide percentage, and carbon monoxide percentage. It might be remarked that the carbon monoxide indicating apparatus is a development of the carbon dioxide type. The amount of carbon monoxide is obtained by a differential measurement of the carbon dioxide present before and after the flue gases are passed through a small electric furnace containing copper oxide which converts any carbon monoxide present into carbon dioxide.

ERRATUM.—The words "on the Use of Preservatives and Colouring Matters in Food" appearing on p. 222, col. 2, of the issue of February 14, in the concluding sentence of the review entitled "The Chemistry of Flour Milling," were inserted in error after the author had passed his proof. The Report of the Departmental Committee already published makes no reference to the bleaching and improving of flour, but a further report will appear in due course.

### Our Astronomical Column.

THE DISTANCE OF THE ANDROMEDA NEBULA.—There have been several very discordant estimates of the distance of this object. A new one has now been made by Prof. Hubble, and is briefly described in *Popular Astronomy* for February. He has found several Cepheid variables in the nebula, determined their periods, and deduced their absolute magnitudes in accordance with Prof. Shapley's formula. The resulting distance of the nebula is 950,000 light years, a distance which would make it of the same general order of size as our galaxy.

This is probably a more trustworthy estimate than those previously made; a possible correction might arise from absorption of some of the stars' light in traversing the nebulous matter.

A note in *Popular Astronomy* points out that the 7th magnitude Nova that appeared in the nebula in 1885 would at this distance have been 140 million times as bright as the sun.

ANNUAIRE DU BUREAU DES LONGITUDES, 1925.—This little handbook is now very well known, and contains as usual, a large amount of useful information—astronomical, meteorological, physical, geographical, political, etc.

The special essays this year are by M. E. Fichot on the effect of the earth's rotation on the tides, and by M. G. Ferrié on the use of lamp valves in wireless telegraphy and telephony, with applications to astronomy. A little more care would seem to be called for in editing the astronomical tables: p. 289 gives the revolution of Mercury 2 days too great, a

very serious mistake; p. 302 in giving the elements of Neptune's satellite omits to notice the very interesting variation in its orbit plane.

The information about the comets of 1923 is not up-to-date; much better elements of comet 1923 *a* were available months ago. The object described here as comet 1923 *b* was found to be a minor planet more than a year ago: there are, moreover, three misprints of proper names in the account of it, "Harward," "Seegrave," "Crowford"; p. 310 gives the erroneous period 12.1 years (more than a year too short) to Tuttle's comet. This mistake has been repeated for several years and has misled many people. This period was deduced from a short arc, and was not intended to be taken as accurate.

UNION OBSERVATORY, CIRCULAR 62.—This circular, dated last June, contains a number of important observations, which include the transit of Mercury (third contact 24 seconds before Nautical Almanac, fourth contact 35 seconds before), also long series of observations of Reid's Comet 1924*a* and Eros, which were too far south for European observers; also 114 occultations of stars by the moon, observed in 1923, which are fully discussed. There are reproductions of the spectra of Nova Aquilæ on 21 days, June 11–August 10, 1918, which are conveniently arranged for studying changes. The identity of the Nova with a 10th magnitude star in the Algiers astrographic catalogue was independently detected by the blink microscope at Johannesburg.