

Fig. 1 shows the curves obtained when the Bellier figures are plotted against the percentages of arachis oil.

An inspection of the curve will show that although the Bellier figures increase with the percentage of arachis oil in the mixture, the increase is not proportional and that there is a steep rise for percentages of arachis oil below 25 but when the arachis oil content increases further the Bellier figures rise only slowly to the maximum of 40° C. for arachis oil itself. The percentage of arachis oil in an unknown

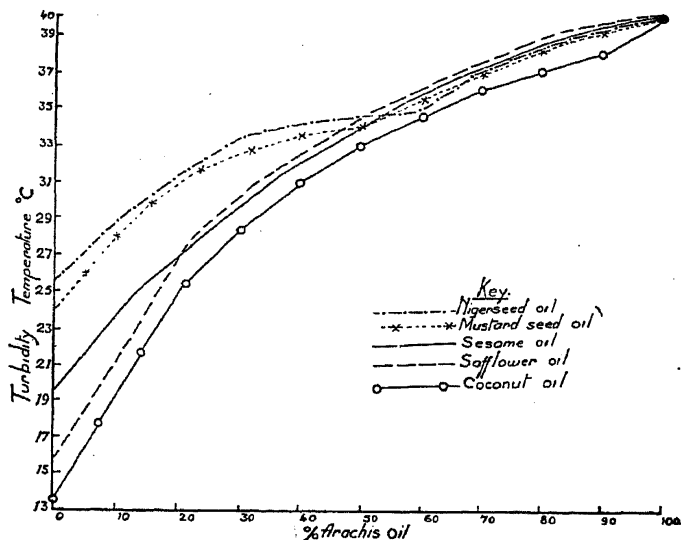


FIG. 1

sample, particularly when the percentage of adulteration does not exceed 50, is given with considerable accuracy by the Bellier figure.

The Bellier figure for genuine buffalo ghee ordinarily falls within the fairly narrow range of 28-30° and that for Vanaspati varies with the nature of the oil from which it was derived. But the values for some unquestionably genuine ghees departed considerably from this range.

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Guindy, Madras,
April 23, 1945.

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1. *Analyst*, 1912, p. 487. 2. *Curr. Sci.*, June 1937, p. 640. 3. *Drugs & Galenicals*, 1937, p. 332. 4. *Abs. Analyst*, 1913, p. 58. 5. *Loc. cit.*

A SCIENTIFIC NEW YEAR'S DAY

SINCE the publication of the above note in *Current Science* of March 1945, 14, 68, it has been brought to my notice that there is nothing really scientific about January 1st being the New Year's Day. The argument was based on the fact that the day of the earth passing through the perihelion of its orbit has of late years been round-about January 1.

As a matter of fact, the date of perihelion is not permanent, and it is only by chance that it, at present, falls around January 1.

The average date at the present epoch is January 2.

The mean tropical year, i.e., the time between two successive vernal (or autumnal) equinoxes, which determines the cycle of the seasons, is 365·24220 mean solar days. The time between two successive passages of the earth through the perihelion, known as the anomalistic year is, however, slightly longer. The mean anomalistic year has 365·25964 days. Thus the anomalistic year is longer than the tropical by 0·01744 of a day, or about 25 minutes, which makes perihelion come about seven days later in 400 years.

The actual time of perihelion passage fluctuates around its mean position by one or two days owing to slight irregularities in earth's motion and to the arrangement of leap years in our calendar, which will account for its variation between January 1, and January 4, during the period taken into account in the previous note.

Perihelion passage coincided with the winter solstice in about 1300 A.D. It will coincide with the vernal equinox in about 6500 A.D. at its present rate of progress.

The actual time taken by the earth to go round the sun, relative to a star, is the mean sidereal year of 365·25636 mean solar days. This is the most constant of the three types of years, changing by only a second in about 10,000 years. The tropical year changes by about a second in only 200 years.

The tropical year falls short of the sidereal due to precision of the equinoxes, which completes a full cycle in about 25,000 years. The anomalistic year exceeds the sidereal owing to the 'apse line', i.e., the major axis of the earth's elliptical orbit gradually moving forward.

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RELATIVE GROWTH PROMOTING POTENCY OF SOME STEROLS ON *CORCYRA CEPHALONICA* STAINI

A FAT-SOLUBLE factor for the growth and pupation of the larvæ of *Corcyra cephalonica* Staint has been shown to be essential; it was, therefore, of interest to determine whether the triglycerides, triolin, tristearin and tripalmitin in any way satisfied the fat-soluble requirement of the insect.

Newly hatched larvæ were fed for ten days on whole jowar and then transferred in weighed hatches to the experimental diets. Whole jowar and chloroform-extracted jowar were used as controls. Results are given in Table I. It may be observed from Table I that none of the triglycerides are useful in promoting the growth of the insect larvæ.

On the 21st day the larvæ were transferred from the triglyceride diets to whole jowar. The larvæ were weighed again after 11 days. The results show that the larvæ in spite of their arrested growth, retain their recuperative power and rapidly respond to the whole diet.

Our previous studies strongly suggested that sterols would probably supply the necessary