uterine weight for untreated controls was 7·8 ± 0·25 mgm. The chemical method of Pincus[6] for urine extraction, modified to avoid the toxic effects of *p*-cresol[7], was employed.

Studies are being continued to investigate as accurately as possible the œstrogen excretion-levels at different stages of the ewe's reproductive life.

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Fruiting of the Oak Mildew

According to Butler and Jones[1], two reports only of the finding of cleistocarps of the oak mildew in Great Britain have been published, the first[2] referring to six cleistocarps on one leaf of *Q. robur* at Bricket Wood, Herts, in October 1945, the second[3] to "a few perithecia on leaves of *Quercus robur*" at Aberystwyth in October 1947. A third collection (Herb. I.M.I. 19315) identified by E. A. Ellis as *Microsphæra alphitoides* on *Q. robur*, from Wheatfen Broad, Surlingham, Norfolk, also in October 1947, is deposited at the Commonwealth Mycological Institute (information from S. J. Hughes).

Robertson and Macfarlane[2] directed attention to the dryness of the 1945 season in Hertfordshire, but also to recent records of cleistocarps from maritime countries (Norway and Holland). 1947 was an exceptionally dry season, and it is widely known that cleistocarps of the oak mildew were found in many parts of Great Britain. Around Bangor, in October 1947, they were found whenever searched for, and some coppice shoots and hedgerow oaks (*Q. petræa*) had cleistocarps on about one leaf in six.

During the more normal seasons of 1948 and 1949 no cleistocarps were seen in North Wales, despite the usual search; but in view of the fact that previous finds appear to have been restricted to dry seasons, it is worth recording the finding of a leaf of *Quercus petræa* bearing 43 cleistocarps in various stages of development at Church Island on the Menai Straits on October 12, 1950; that is, after an exceptionally wet season, in which the mildew mycelium was comparatively scarce, in one of the wetter districts of the British Isles, within about fifty yards of the sea (that is, the Straits).

Material has been deposited at Kew (Herb. I.M.I. 43967), and thanks are due to Mr. S. J. Hughes for comparing it with other material and confirming it as *M. alphitoides* Griffon and Maublanc, as provisionally identified by Robertson and Macfarlane[2].

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Studies on the Development of the Boll, and the Formation of Oil in the Developing Seed in some Varieties of Egyptian Cotton

The present work, concerning the development of the boll and the formation of oil, is an attempt to fill a gap in our knowledge of the botany of Egyptian cotton. Development of the boll was investigated in four varieties: Ashmouni, Sakel, Wafir and Maarad. Two of these, namely, Ashmouni and Maarad, were selected for the determination of the oil in the developing seed.

The first two weeks in the life of the boll were an 'intensive period' of development both in size and green weight. In this period alone, more than 80 per cent of size and green weight of the boll were formed in Ashmouni, Wafir and Maarad, and more than 70 per cent in Sakel.

During the third week, the rate of growth decreased rapidly until the boll reached its maximum size and green weight. The first three weeks may, therefore, be considered the 'productive period' of growth in the boll's life.

After this period, the weight and size of the bolls remained nearly constant for a period, then began to decrease very slightly shortly before opening; the latter decrease was most probably due to loss of water and shrinkage in the final stages of development.

The size of the boll of the four varieties was found to differ markedly: the biggest were Wafir and Maarad bolls, Ashmouni boll was intermediate, and the smallest was Sakel boll.

The number of seeds per locule and boll was determined, and it was found that the prevailing number of seeds per locule was 5–7 seeds, occasionally 4 or 8, rarely 3 or 9, and there was an indication that a positive relation exists between number of seeds and size of boll.

Formation of oil in the cotton seed did not show any relation to the growth of the boll (in size or green weight) or its contents. Most of the oil content of the seed was formed during a short and definite period of growth. This definite period of active oil formation started when the boll almost reached its maximum size and green weight, and continued for about twelve days, that is, from the twenty-first to the thirty-third day of the boll's age. Oil formation before and after this active period was very slow and insignificant.

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The Cellulosan of Jute Fibre

It has been shown[1] that a good-quality jute fibre contains about 28 per cent of hemicelluloses (that is, cellulosan and polyuronide hemicellulose of Norman[2]), of which, from furfural and carbon dioxide yield, 11·6 per cent was calculated to be xylan, 4·5 per cent polyuronides and the rest (by difference) hexosans. A 9·3 per cent caustic soda extract of the holocellulose (obtained from defatted jute with sodium chlorite[3]) at room temperature gives, on acidification and addition of an equal volume of alcohol, a white,