Calendar of Nature Topics

Third 'Buchan Warm Spell'

The last of Dr. A. Buchan's well-known warm and cold spells comes on December 3, when he supposed that a period of relatively high temperatures began, and continued almost until the middle of the month. On examining the smoothed daily averages of temperature for 90 years at Greenwich, it is seen that a rise does actually begin on December 3, the temperature reaching a maximum on December 5 and 6, but the amount of the rise is negligible—only 0·6° F. After this there is a fall to a minimum on December 10–11. In individual years there appears to be no special tendency for Buchan's period to be abnormally warm, but the fluctuations of temperature in England are so rapid that the chances are in favour of any 12-day period including a few warm days. On the whole, it cannot be said that the existence of Buchan's third warm spell is supported by the statistics for London.

Predatory Mammals and Game Birds

That the losses of the game preserver due to foxes may be reduced, where rabbits and small rodents are present in sufficient numbers, is suggested by a study of the food of foxes on an 800-acre estate in Michigan (Dearborn, 1932). The estate, which is mainly rough and uncultivated land, well provided with low-growing vegetation and rich in wild fruits, is heavily stocked with pheasants. Several hundreds of reared birds are liberated annually to maintain the stock. Feeding stations scattered throughout the area are kept supplied with grain over a considerable part of the year. The insect fauna, especially grasshoppers, is abundant.

The ample food and cover designed for the pheasants encourage a large population of rabbits and field mice, voles, etc. The red fox (*Vulpes fulva*, Desmarest) breeds in the area, but appears to do little harm to the game. This is confirmed by detailed examination of 68 fox droppings, which were found to contain 73·2 per cent by bulk of remains of small mammals, 15 per cent fruit, 6 per cent insects and 5·8 per cent birds, the few pheasant remains being chiefly from young birds.

Examination of the droppings of the American badger (*Taxidea taxus* Schreber), which is legally protected for part of the year throughout Michigan, showed that, like the European badger, it does little harm to game or other birds. Remains of insects and small rodents accounted for 98·2 per cent of its droppings, with only 0·2 per cent egg-shells.

Last of the Guadalupe Caracaras

On December 1, 1900, a flock of eleven of the scavenging falcons, or caracaras (*Polyborus lutosus*), flew towards Rollo H. Beck in Guadalupe, and in that gentleman's own words, "of 11 birds that flew towards me 9 were secured; the other two were shot at but got away. The eleven birds were all that were seen, but judging by their tameness and the short time I was on the island I assumed at the time that they must be abundant". So far as is known, Mr. Beck in so doing exterminated the Guadalupe caracara, and there was little excuse for the slaughter, for all told, before Beck's specimens were killed, only twenty-eight specimens had ever been recorded (C. G. Abbot in *Condor*, 35, 10; 1933).

About 1875, Dr. Palmer collected about a dozen skins, knowing the bird to be "a rare bird in process of extinction". At a later date, Harry Drent, a goat hunter, captured four caracaras alive, by a trick he learned in South Africa. "The first bird I winged with a shotgun. I then made him a prisoner and staked him near a large boulder. I then took a string, fastened it to a stick and made a loop similar to a cowboy's lariat. I then hid myself behind a rock, knowing the other birds would come to the captive. I threw the rope and captured a second bird. I then made him a prisoner with the other. By this method I secured four out of the seven birds on the island."

Codling Moths begin to emerge in New Zealand

The codling moth (*Cydia pomonella*) is a European insect which has been carried to, and flourishes in, almost every part of the world where apples are grown. The damage it causes is everywhere serious—in 1907 the annual loss in the United States alone was reckoned at 12,000,000 dollars, probably it is now double that amount—and since the effectiveness of control measures depends upon an intimate knowledge of the life-history, the insect has been studied in detail in many countries.

The life-history shows great variation: in the far southern States there are three generations in a year, in the northern States even the second generation is a small one; in New South Wales there are two broods and a partial third brood, but, strange to say, in New Zealand, L. J. Dumbleton has just shown that in most localities only one brood occurs each year (*New Zealand J. Sci. Tech.*, 14, 112; 1932). By a method of bait-trap collecting, he proved that the adult moths begin to emerge in November and emergence continues until the end of January. The larvæ commence to emerge from the apples about the second or third week in January, and then hibernate under the bark during the winter months. About the second week of October the over-wintered larvæ begin to pupate. The details of the life-history fluctuate in different districts in accordance with mean temperatures and the number of rainy days per month, and in any district emergence of the moths may be delayed by rough and cold weather.

Brussels Sprouts

The picking season for this crop is now in full swing and will extend throughout the winter months. A day's 'brussling', as the men call it, is a good test of stamina and resistance to cold, for the plants are usually wet and the sprouts only a few degrees above freezing point.

This is one of the crops gradually spreading from the market garden to the farm, where it is grown by large-scale methods, its very success bringing problems of disposal and marketing in its train. Brussels sprouts, like all species of *Brassica*, are very variable; even a casual observer looking over a crop can scarcely fail to be struck by the difference in size and conformation of the plants and the lack of uniformity in the sprouts themselves. Races of sprouts displaying uniformity in the commercial qualities of size, hardness, colour, resistance to frost and freedom from 'blowers', that is, the habit of forming open rosettes instead of solid sprouts, are eagerly sought for by the growers. This need is more likely to be met by systematic scientific work than in any other way, and the outlook is more promising since a study of these problems has been taken up at the Horticultural Research Station, Cambridge.