

NOTE ON THE PREVALENCE OF ANOPHELES.

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IN a previous paper¹ a record of the distribution of *Anopheles* in Great Britain was given, the localities mentioned including Cambridge and the surrounding country. Since 1901, *Anopheles* imagines have been searched for in cellars and houses during the winter, in places where they were known to congregate. During the summer a yearly search for larvae was made in various collections of water in the vicinity of Cambridge with a view to securing material for purposes of study and instruction. It appears worthy of note that there has been a notable decrease in the number of imagines caught in cellars, etc. in the winter months. The insects were fairly numerous in my own house during 1901–1902, as many as 60–100 being found hibernating in the cellar. In 1903–1904 there were fewer, only about 6 being caught. Not a single imagine has been caught in the house since that winter. Whereas *Anopheles* were frequently caught in houses during 1901–1903 in the warmer months, very few were encountered in 1904, and I have not found a single specimen this year. The common *Anopheles* in this region is *A. maculipennis*, as I have already recorded, *A. bifurcatus* being less frequently encountered. Apparently corresponding results have to be recorded with regard to *Anopheles*' larvae. These were certainly very numerous during the period 1900–1903, and they have become scarcer since, being apparently quite absent in certain waters where they formerly abounded. That the *Anopheles* are not extinguished is certain, for I have found a few larvae (*A. maculipennis*) in the river Cam this summer, and my friend Mr Pearce has brought me an imago from Grantchester (close to Cambridge), in addition to larvae of *A. bifurcatus* which must have hibernated there. Hibernating larvae of this species have twice been found by me since I first recorded their presence about Cambridge.

¹ "Studies in Relation to Malaria," this *Journal*, vol. I, pp. 4–44, 1901.

County	Place	Height above sea in feet	Species of <i>Anopheles</i> found	Notes	Collector
Lincolnshire	Cadney near Brigg	-100	mac.	Caught one ♀ in his house "on a cold, raw day" with 5 <i>Culex</i> .	E. A. Woodruffe-Peacock 23. iii. 1901
Huntingdon	Houghton to St Ives	About 25	mac.	Larvae plentiful along river banks all the way.	G. H. F. N. 5. vii. 1901
	Ramsay	-50	mac.	Larvae very plentiful in ditch near Abbey, water containing <i>Spirogyra</i> and <i>Lemna</i> . In ditch 1 mile distant on fen, few larvae, water not so clear.	T. S. Pigg 3. viii. 1901
Cambridge	Grantchester	50-100	mac. bif.	Imago caught in house. Larvae caught in tub.	N. D. F. Pearce iv. 1905
W. Sussex	Slinfold (4 miles W. of Horsham)	-100	mac.	Larvae found in most streams of district, moderate numbers, none in main river.	Stanley Child 3. ix. 1901
Cheshire	Rowton and vicinity	All	mac.	Larvae found in 1 ditch, 1 dried stream, 9 ponds. Of 16 other places tried without result, there were: 7 ponds (<i>Lemna</i> covered), 1 pond (swarmed with tadpoles), 4 ponds very thickly weed-covered, 1 pond very dirty. Found with <i>Culex</i> in 2 ponds, with fish in 3 ponds. Larvae plentiful.	J. W. S. Macfie 21-28. vi. 1901
	Waverton	50-100		2 imagines caught in house at Rowton Hall.	10 iv. 1901
	Saighton	"		(No cases of locally acquired ague admitted to Chester Infirmary since 1891, no access to older records.)	
	Bruera	"		Larvae found.	C. W. Daniels iv. 1901
	Hatton Heath	"			
	Christleton	"			
	Stanford Bridge	"			
	Tarvin	"			
<i>Wales</i> Carnarvon	Conway	-50	bif.	Larvae found.	
Monmouthshire	Flat country near Major & Redwick round the coast between Chepstow & Newport (nearer Newport)	Near sea level	?	Larvae found. (Well known that there was much malaria thereabouts about 1860-70. No cases now as far as could be ascertained.)	J. Cropper ix. 1901
	At Chepstow		mac.	Imagine caught in house.	"
<i>Ireland</i> Galway	Clonbrock near Ahascragh	?	bif.	One ♂ caught in outhouse.	G. H. F. N. 7. v. 1901

Of course this is but an isolated observation, and necessarily it can have but limited value. It is known of other insects that they are more numerous in some years than in others. For instance *Culex pipiens* abounded in many parts of Cambridge last year, so much so that many persons spoke to me of it, and I captured large numbers in cellars where Anopheles had previously been frequent. In one cellar, in the winter of 1903–1904, I only succeeded in catching one *A. maculipennis*, whilst *C. pipiens* were present in hundreds. We do not know the laws that govern these variations in the number of insects in different years, but it is obvious that variations do occur. It is possible that the reduction in the number of Anopheles in these parts has been due to repeated sudden rainfalls during the last three summers, personally I am strongly inclined to the opinion that these rainfalls have exerted an influence.

Sudden rainfalls would necessarily wash away the larvae in large numbers from the situations which they normally inhabit. It is dangerous to argue from an isolated instance, but knowing that ague formerly prevailed in these parts an explanation of its disappearance may possibly be found in a reduction of the Anopheles persisting for a sufficient length of time to break the chain of parasitism of the malarial parasites in man and the mosquito. It appears again warranted to suggest the desirability of further observations being made along these lines elsewhere.

The preceding data may be added to those already published regarding the geographical distribution of Anopheles in Great Britain¹, the same form of tabulation being adopted here.

I am much indebted to the gentlemen mentioned in the foregoing table for kindly supplying me with the data therein contained. I determined all the specimens collected with the exception of the larvae found by Drs Daniels and Cropper, and the imago of *A. maculipennis* caught by the latter. Both of these gentlemen are well-known as experienced collectors of mosquitoes. I shall be indebted to any gentlemen who will kindly supply me with further facts regarding the geographical distribution of Anopheles in Great Britain.

¹ This *Journal*, vol. 1, p. 14 and Maps.