

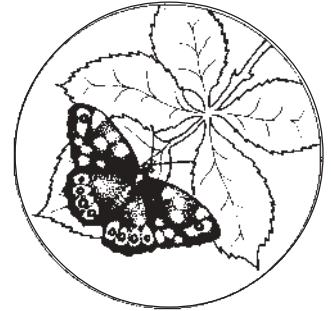
THE ESSEX FIELD CLUB

HEADQUARTERS:

THE PASSMORE EDWARDS MUSEUM,

ROMFORD ROAD, STRATFORD,

LONDON, E15 4LZ



NEWSLETTER NO. 10

April 1994

THE FUTURE OF THE FIELD CLUB'S COLLECTIONS

As members will be aware from Newsletter No 8, your Field Club Council has been frantically exploring ways to safeguard the club's collections and library in the wake of the financial crisis being experienced by the London Borough of Newham.

As incoming president, the problem was obviously going to fall on my shoulders, and so as many of you will now be aware, I made the suggestion that we take the radical step of attempting to retrieve our collections and seek to build a new museum repository especially to house them, and to house the rapidly growing collections of our increasingly active club recorders. The big national museums are no longer interested in taking over local collections, - they too have their financial problems -, we need however to safeguard our Essex collections as vouchers that can be checked in the future and so that future generations can see just what the flora and fauna of our county was like in the past.

We have been having detailed discussions with the London Borough of Newham and the Superintendent of Epping Forest, and are currently exploring the possibility of a venue for the new museum, somewhere in the Epping area. Several of us have also been assessing the size and nature of the EFC collections, and working out how big a building we will need to house them and just how much it will cost to build, run and insure. Detailed costings and plans have also been obtained of the new automated, and airconditioned museum repository, constructed recently by the British Entomological & Natural History Society at Dinton Pastures near Reading.

If all goes well, we hope to have a modern fully airconditioned Field Club museum back in Essex in the not too distant future. In addition to housing our collections, we plan to have a working area facility where members can study the collections, and for example use microscopes, and enter information onto a computer database.

Assuming we find a suitable site, we estimate that £120,000 will be required to complete the construction and equipping of the new building. While we are reasonably confident that this money could be raised as a series of interest free loans, with some of it in the form of grants, we shall need a sum of this order of magnitude to pay for the building in the long term, and additional funds as an endowment to cover the running costs.

Though this sounds a lot of money it is little more than the value of the average Essex house. If just one of our members, without a family to leave their house to, were to leave it to the club, it would pay for this new building and we would be only too delighted to have the name of that person emblazoned on a brass plaque over the entrance!

Ken Adams, President

AN INTRODUCTION TO POLLEN ANALYSIS

Some readers have expressed interest into the short synopsis of the pollen work at Walthamstow marshes in the previous Newsletter. In order to explain the findings in greater detail it may be a useful exercise to explain what "pollen analysis" is.

Historically pollens have been the dominant method of analysis for climatic investigations since the 1920's and this is now a refined tool of research, but C14 dating has tended to give pollen analysis a lowly status.

Pollen grains are "male" parts of a flowering plant formed in the anther, these are intended to reach the female stigma of a flower after which fertilisation can take place. Spores produced by the lower plants follow a different life cycle but are ultimately dispersed in the same way as pollens. Some people are particularly sensitive to these small grains and hay fever sufferers know this only too well.

Pollens are microscopic in size but their walls are partly made of a waxy material very resilient to decay, hence they can remain well preserved when buried. They can be attacked by microbial organisms, oxidised by other agents or suffer from mechanical damage.

The walls of spores and pollen have distinct characteristics such as shape, size and surface features which can be used to identify the parent plant. (see examples).

Pollens are to be found in a wide ranging set of environments, wherever suitable conditions allow the pollen to become entrapped and buried. Laboratory analysis involves taking samples from exposures or borehole cores of lake and river sediments (or Oceanic sediments). From measured points along a sample length a small amount of material is taken. The samples are treated with various chemicals and acids to remove unwanted mineral and certain organic fractions, so you are left with a pollen "soup" which is stained and mounted on a microscope slide.

Under the microscope the slide is examined and identifiable pollens and spores counted until a predetermined number is reached. This is usually around 150/200 grains (of course the higher the number the better the resolution but counting to high numbers is very tedious). From each slide that has been taken from a different level it is possible therefore to build up a diagram in the form of a percentage graph of pollen composition for each level and from inference a picture is made of vegetational composition over time. From the changes in the plant communities over time it is also possible to infer the climatic conditions at a given point by reference to indicator species whose ecological requirements are well known, for example cold growing and warm growing plants.

However a range of factors which complicate the analysis have to be borne in mind. Production rates of pollens with different plants varies and this knowledge is used to statistically alter the pollen graphs, leaving what is called a corrected diagram. There can be differential preservation, some pollens being more resilient, or differential dispersion with the shapes and weights of pollens affecting the final resting place.

Interpretation of the diagrams is usually taken with reference to stratigraphic changes and other biological evidence such as fossil bones and molluscs. Notwithstanding the weaknesses of pollen diagrams they are remarkably consistent taken as a whole and remain a useful tool in reconstructing past environments.

Sketches of some common pollens and spores. X 300



Quercus (Oak)



Pinus (Pine)



Tilia (Lime)



Alnus (Alder)



Rumex (Dock)



Filicales (Fern)

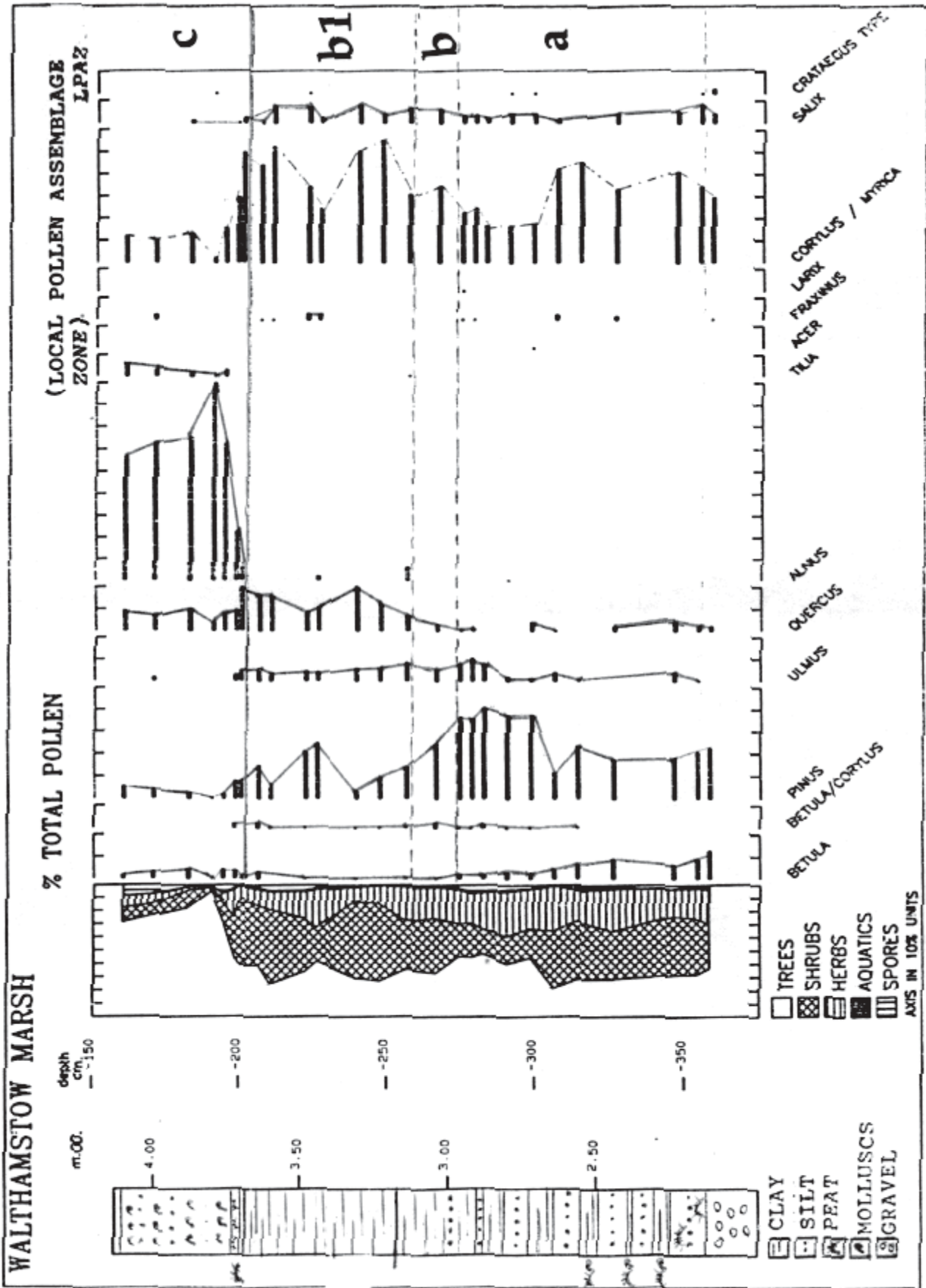


Pteridium (Bracken)



Sphagnum

Walthamstow Marshes - Pollen Diagram (Trees and Shrubs - unconnected)



General Correlation of Local Pollen Assemblage Zones and Climatic Periods with Inferred Climatic Conditions.

Estimated Years b.p.	Local Pollen lpaz	Blytt / Sernander Period		Inferred Climate
5,000	150-202 cm C Alnus, Quercus, Tilia.	Atlantic	Mesolithic	Warm Wet
7,000	202-255 cm b1 Pinus, Quercus, Ulmus, Corylus.			Warm Dry
	255-272 cm b Pinus, Corylus.	Boreal		Warming Dry
	272-360 cm a Pinus, Corylus, Betula.			Ameliorating
9,000				

Notes for interpreting the Walthamstow marsh pollen diagram

Walthamstow marshes enjoys SSSI status and is managed as a nature reserve by the Lea Valley Park Authority. It is situated in the east end of London and I encourage readers to visit the locality.

For general interpretation the diagram is an uncorrected type. Pollens are also taken to be of local and regional origin and not necessarily to indicate the past presence of plant types at Walthamstow. The herbs, aquatics and spores have not been given the attention they deserve, they serve to illustrate the continuation of marsh/aquatic stands.

To the left of the diagram is the borehole log, note the ranges of sediments that have been encountered which indicate changes in conditions of deposition over time.

The diagram has also been divided into zones, the boundaries of which are discussed in the text.

At the base of the borehole log on the left you will see a gravel layer which is considered to be the floodplain gravel deposited at the end of the last ice age.

Zone a. Alternating silts and organic clays, which is indicative of the early establishment of floodplain channels. Declining open vegetational conditions is indicated by the overall falling of herbs and shrubs. The early Boreal period marks the transition from the open tundra conditions of the post-glacial age and the gradual afforestation of lowland England. *Betula* (birch) is an effective coloniser of open ground (a "pioneer" plant) and is already established and declining, giving way to *Pinus* (pine) and *Corylus* (hazel).

Zone b. The lithology shows a change from silt to clay which indicates a more stable depositional regime. *Pinus* (declining) and *Corylus* are still the dominant taxa. The high values of *Corylus* may indicate a prevalence of a hazel scrub below a canopy of pine. The high canopy may also have affected the birch, as a light loving species, whose decline is marked. The climate appears to have continued to ameliorate, with the warmth loving species beginning to make more substantial inroads with the expansion of *Quercus* (oak) and *Ulmus* (elm).

Zone b1. Generally the same as zone b, but there are subtle differences. The sediment changes to a more organic clay with the first appearance of *Alnus* (alder) and *Fraxinus* (ash). The environmental situation is difficult to interpret. A tentative explanation is offered, citing a range of possibilities. A slight thermal decline (hence the lag in oak values) accompanied by an increased dampness brought about by local or regional weather change, with increased flooding as evidenced by the increased organic fraction in the clay. The presence of ash indicates sites were available that were too damp for oak and hazel but not wet enough for pine. The first appearance of alder could also be a pointer to increased wetness albeit temporarily.

Zone c. This is marked by the presence of a thin peat layer in the sedimentary profile, succeeded by a "shell" layer. This zone shows the most abrupt change in species composition and rather than a large hiatus (the new species show a quick but gradual introduction) could be a dramatic climatic boundary. *Tilia* (lime) is considered to be the most thermophilous of the post glacial invaders and is slightly preceded by the dramatic rise of alder, which is thought to be indicative of increased climatic wetness, contrasting to the ecological requirements of oak which dislikes wet conditions and shows decline at the base of the zone. There is also an initial burst of *Cyperaceae* (sedge) and *Filicales* (ferns). The shell marl may also be indicative of increased rain run-off with terrestrial

molluscs forming a sizeable percentage of the molluscs identified (along with aquatic molluscs).

Above the shell marl pollens are not present or are poorly represented due to oxidation. However, seed remains found by other workers (Reid 1901) belong to cultivated species such as *Triticum sativum* (wheat), *Vitis vinifer* (grape) and *Prunus domestica* (damson) place the uppermost sediments to the post neolithic.

In the absence of carbon dating, a general correlation of the pollen assemblage zones is given;

I would like to acknowledge Ms Dulcie Blake of the new Guildhall University for identifying and pollen counting prepared slides.

Reference.

Reid. C. 1901 The seeds from alluvium, Walthamstow. Essex Nat.

A fuller account of the evidence for past environmental change of Walthamstow marshes is in preparation for the "Naturalist".

Alyn Pilkington.

A NEW FLORA OF ESSEX

Imagine if in 1862 George Gibson, author of the first Flora of Essex, with a camcorder and 35mm camera at his disposal, had imaged a thousand or so of the best botanical sites and a good selection of the available habitats in Essex. We could now have the pleasure of seeing just what the botany of Essex was really like in those far off days, and just how sparse by comparison, it is today.

It is now 20 years since the second Flora of Essex by Stanley Jermyn was published. Sadly, despite the waves of environmental concern that wash back and forth across our consciousness, little has really been done to stem the tide of extinctions or the wanton destruction of habitats, and we desperately need a new overall assessment of what we have left.

In the new year I am proposing to launch 'A snapshot of the geography of Essex and its plants project'. Over a 5 year period as many people as possible will be invited to assist in surveying our Essex flora in preparation for a new Atlas of Essex Plants together with one or more videodiscs, illustrating a thousand or so Essex sites and representative habitats. Colour stills, panoramic shots and video sequences will be interfaced together as a multi-media collection, so that maps of plant distributions, aerial photographs of sites, and associated text, can be pulled up on the screen, together with close up pictures of the plants in situ. The viewer will be able to call up a map of Essex and look at land use across the whole county, or zoom in to a 10km or a 1km square and see the distribution of arable, grassland, saltings, primary or secondary woodland, or even soil type. The idea is to involve as many organisation with specific data bases, and individuals with particular expertise, as possible, in a concentrated effort to record the face of Essex and its plants as it has never been recorded before.

Ken Adams

CONTRIBUTIONS TO THE NEXT NEWSLETTER

Please send contributions for the next Newsletter, due out in August, to the Editor, Mr Peter Harvey, 9 Kent Road, Grays, RM17 6DE by the end of the second week of July.

A NEW RECORD OF THE THERIDIID SPIDER *Achaearanea tepidariorum*

John Keeliher has sent me an adult female spider from a bay window in his house at Shoeburyness which was clearly an *Achaearanea* species. These make typical Theridiid scaffold webs and are capable of capturing quite fearsome prey, such as the large female of the house spider *Tegenaria gigantea* that was found in its web. The spider seemed to be very pale and to have an unusual female epigyne, so I sent it to John Murphy, an expert in European and world spiders for his opinion. He has determined it as *Achaearanea tepidariorum*, the first record of this species in Essex since its occurrence was noted by F. P. Smith in his series on "The Spiders of Epping Forest" published in the Essex Naturalist between 1901-4. This old record was from the long since abandoned Pauls Nursery near High Beach in Epping Forest. The spider is usually associated with houses and greenhouses, unlike its smaller close relative *Achaearanea simulans* a nationally notable species that has turned out to be quite widespread in scrub and woodland habitats in Essex

Peter Harvey

TWO ESSEX COAST PROTECTION AREAS

The Minister of Agriculture has announced the launch of the Essex Coast E.S.A. (Environmentally Sensitive Area). This stretches from the south bank of the Stour at Mistley around the coast and estuaries to finish near Mucking in the south of the county. The only large areas of undeveloped land not included are the Dengie Hundred and Wallasea Island.

The aim of the scheme is to support the traditional farming methods that have helped form the landscape and wildlife habitats of the coastal marshes. Payments will be made for retaining existing grassland, recreating wetlands and marshlands and for returning arable land to marshland. Entry into the scheme is for ten years although there is an option to terminate after five years. Hopefully this scheme will be more successful for wildlife habitat creation than short term schemes such as set-aside.

In addition 2,100 hectares of mudflats and saltmarshes at Benfleet and Southend east of Canvey have received Special Protection Area designation from the Environment Minister Robert Atkins. The site is of international importance for wading birds such as Brent geese, Grey plover and Knot during the winter. Despite past development proposals for this area, the whole of the intertidal foreshore is now hopefully protected.

THE QUEST FOR A YELLOW-NECK MOUSE!

Early in the new year I received a request from a friend, could I arrange some small mammal trapping where it was possible to catch a Yellow-neck Mouse. My friend has an acquaintance living in Manchester who has never seen this species. During the latest sessions of the national small mammal survey we had caught a record number of Yellow-necks and as there had been a lot of wet weather and many areas had been flooded I thought it might be interesting to trap again on the grid points at which we had caught animals before.

Having obtained permission from the land owner, my friend and I laid out two Longworth traps at each of 15 points of the 45-point grid we have permanently set out in the wood. We did this on a Friday afternoon and arranged to meet in Harlow at 7.00 am the following morning. As this man was coming down from Manchester to see a Yellow-neck Mouse, I decided to hedge my bets and set six traps along a hedgerow close to my home (I have caught this species in my shed when they have been after stored apples).

On the Saturday morning I examined the traps close to my home; none were sprung. I had a sinking feeling. What if none of those in the study area were sprung? Well, at least we could leave the traps down and try again Saturday night. I arrived at the meeting point at 7.00 am. My friend was already there but the chap from Manchester was not. I had assumed he would be staying overnight with my friend, but no, he was travelling down this morning. He arrived in Harlow at 7.20 am having left Manchester at 4.00 am.

When we got to the study area it was very wet indeed and the chap from Manchester was without wellies. He made no bones about it, took off his socks and shoes, put on an old pair of trousers and pressed on.

The first two grid points had no traps sprung. The third had one sprung; we had caught a Wood Mouse. After Bill (the Manchunian) had examined the animal it was released. Two grid points on, our efforts were rewarded and we had caught a Yellow-neck. Bill looked at it carefully and we discussed the differences between it and the Wood Mouse but Bill was not sure he could see them clearly so we kept the Yellow-neck with us as we moved on to the next traps, thinking we were certain to catch another Wood Mouse for comparison ("we always get Wood Mice here" we said). As we progressed along the grid line we found we had caught Common Shrew (2), Pygmy Shrew (2), Bank Vole (2) and another 2 Yellow-necks. It wasn't until we were at the last grid point that we found another Wood Mouse. Bill was able to examine both species closely in detail before we released them and made our way back to the cars. Bill went to my friend's home, had some breakfast and headed back to Manchester (via "Woburn" to see Chinese Water Deer) and he arrived home in Manchester in time for football in the late afternoon.

I forgot to mention that my friend is a "twitcher". Bill was once, but got fed up with the crowds of twitchers that go to see all the rare birds and he now puts his efforts into looking at Mammals. The Yellow-neck Mouse was Number 50 on his list of British species seen; he must get full marks for commitment.

Alf Gudgion

WHATS ON: ESSEX FIELD CLUB

APRIL

- Wed. 20th **Bird Group.** Belthus Woods Country Park for migrants. Meet 10.30 am at car park TQ565825. Leader John Bath. Phone: (0277) 651890 for details.
- Sunday 24th **General Meeting 1384.** The four seasons recording project. Amphibians and aquatic invertebrates in the Backwarden Reserve. Meet 10.00 am at car park TL 782039. Leaders David Scott and Tony Boniface. Phone: (0245) 266316 for details.
- Saturday 30th **Mammal Group.** Gardening for amphibians. Afternoon meeting 2.30 pm. Phone: John Dobson for details (0245) 224408.

MAY

- Sunday 8th **General Meeting No. 1385.** Botany and birds at Marks Hall. Meet 10.30 am at Visitor Centre car park TL 839251. Leaders Judith and Tony Boniface. Phone: (0245) 266316 for details.
- Saturday 14th **Botany Group.** Flowering plants and mosses. Chalkney Wood. Meet Forestry Commission car park TL 872279 at 10.30 am. Leaders Jeremy Ison, phone: (0376) 345235 and Ken Adams phone: 081-508 7863.
- Friday 20th **Mammal Group.** Evening meeting in Southend area. Phone John Wright: (0702) 78409 for details.
- Sunday 22nd **Insect Pests.** A search for common species. Meet at Farm Shop car park TQ579923. Leaders Mark Hanson and David Bloomfield. Phone: (0277) 210247 for details.
- Sunday 29th **Botany Group.** Chalk flora of Purfleet. Meet at Purfleet station TQ554781 at 11.00 am. Leader Ken Adams. Phone: 081-508 7863.

JUNE

- Sunday 5th **Geology Group.** Joint meeting with Essex Rock and Mineral Society. Red crag fossils at Walton-on-Naze. Meet outside Cafe near the tower TM 265234 at 10.00 am. Please phone the leader Graham Ward if attending: (0277) 218473.
- Friday 10th **Bird Group.** Botany and birds. An evening alk at Mountnessing along the river Wid followed by Bird Group A.G.M. Meet TQ 623974 at entrance of track at 7.00 pm. Leaders Judith and Tony Boniface. Phone: (0245) 266316 for details.
- Sunday 12th **General Meeting 1386.** Biological recording at Old Water Works site, Sandford Mill. Phone Tony Boniface: (0245) 266316 if attending as entrance is through a locked gate at 10.30 am. Dr Tony Walentowicz will have the key. TL 739063.

- Saturday 18th **Noak Bridge.** Recording meeting for invertebrates. Meet Village Hall car park . TQ 696905 at 10.30 am. Leader Peter Harvey. Phone: (0375) 371571 for details.
- Friday 24th **Mammal Group.** Bat roost visit. Evening meeting at 9.00 pm. Phone John Dobson for details: (0245) 224408.
- Saturday 25th **Botany Group.** Woodland Plants. Witch Wood in the Marks Hall complex. Meet TL 855256 at 10.30 am. Leader Jeremy Ison. Phone: (0376) 345235 for details.
- Sunday 26th **Geology Group.** Joint meeting with Essex Rock and Mineral Society. London clay fossils at Osea Island near Maldon. Meet at Decoy Point TL 891070 at 7.15 am to return by noon. Please phone the leader Graham Ward if attending: (0277) 218473.
- JULY
- Saturday 2nd **General Meeting 1387.** Plants and general natural history, Christhall Church. Meet in Church car park at TL 451386. Time 11.00 am. Leaders Charles and Shirley Watson. Phone: (0279) 505309 for details.
- Friday 8th **Mammal Group.** Bat Walk. Evening meeting at 9.00 pm. Phone: John Dobson for details: (0245) 224408.
- Sunday 10th **Botany Group.** General botany around Leez Priory. Meet outside the Priory at TL 699185. Time 11.00 am. Leader Tim Pyner. Phone: (0702) 332425 for details.
- Friday 15th **Bird Group.** Evening at Hanningfield reservoir. Meet on the Causeway TQ 723971 at 7.00 pm. Leader John Bath. Phone: (0277) 651890 for details.
- Saturday 16th **Botany Group.** Woodland plants. Little Hales Wood, Ashdon. Meet TL 574410 at 10.30 am. Leader Jeremy Ison. Phone: (0376) 345235 for details.
- Sunday 24th **Geology Group.** Joint meeting with Essex Rock and Mineral Society. Erratics, minerals and fossils in quarries around Stanway and in a private mineral collection. Meet at Bob Burton's house, 11 Warren Lane, Stanway, opposite quarry at 2.00 pm. Please phone David Turner if attending: (0245) 267450.
- Sunday 31st **Bird Group.** Copt Hall marshes, Great Wigborough. Meet at National Trust car park. TL 981146 at 10.30 am. Leader John Bath. Phone: (0277) 651890 for details.
- AUGUST
- Saturday 6th **General Meeting.** The four seasons recording project. Danbury Common. Flowering plants, birds, invertebrates etc. Meet Danbury Common car park TL 782045 at 10.30 am. Phone Tony Boniface: (0245) 266316 if attending.
- Sunday 7th **Galls in Epping Forest.** Joint meeting with British Gall Society. Meet Conservation Centre car park TQ 413982 at 10.00 am. Leaders Dr Brian Spooner and Jerry Bowdrey.

ESSEX FIELD CLUB PUBLICATIONS

The following publications are still available from Essex Field Club (Publications), Mark Hanson, 28 Sylvan Road, Forest Gate, London E7 8BN.

All titles are available to individuals on a cash with order basis. Please add 50p towards postage and packing irrespective of the size of the order.

THE ESSEX NATURALIST SERIES

- No. 1. **Deer of Essex** by Dr Donald Chapman.
A 50 page paperback describing the distribution and history of deer in Essex. Photographs, maps, etc. ISBN 0 905637 06 2 (published 1977) PRICE £2.00
- No. 3. **Tiptree Heath - its history and natural history** by Laurie Forsyth.
19 page booklet describing the most important heathland habitat in Essex. ISBN 0 905637 08 9 (published 1978) PRICE 60p.
- No. 4. **The Wildlife of Epping Forest** edited by Dr David Corke.
60 page paperback with photographs and line illustrations. A review of the animal life of the Forest by the leading experts on each group of animals. ISBN 0 905637 09 7 (published 1979) PRICE £1.50
- No. 5. **The Essex Field Club - the first 100 years** by L. S. Harley.
21 page booklet describing the history of the Club on the occasion of its centenary. Photographs. ISBN 0 905637 10 0 (published 1980) PRICE £1.00
- No. 6. **The Smaller Moths of Essex** by A. M. Emmet.
The most detailed account of the smaller moths ever published for any British county. Distribution maps and details of over 1000 species. Illustrations of representative moths in each major group. ISBN 0 905637 11 9 (published 1981) PRICE £5.00 (reduced from £7.00).
- No. 7. **Lords Bushes** by M. W. Hanson.
The history and ecology of an Epping Forest woodland. 69 page paperback with 8 pages of photographs and additional line drawings. ISBN 0 905637 12 7 (published 1983) PRICE £3.00
- No. 8. **The Larger Moths and Butterflies of Essex** by A. M. Emmet and G. A. Pyman.
The companion volume to No. 6. Distribution maps for every species and a complete analysis of the changing butterfly and moth fauna of Essex. ISBN 0 905637 13 5 (published 1985) PRICE £6.00 (reduced from £9.00).
- No. 9. **The Dragonflies of Essex** by Dr Edward Benton.
A very comprehensive and readable account of the county dragonfly fauna. It includes the results of a recent county-wide survey and much historical information. ISBN 0 905637 14 3 (published 1988) PRICE £5.95
- No. 10. **Essex Elm** by M. W. Hanson.
Elms were devastated by Dutch Elm disease. In this booklet Mark Hanson examines the role of elms in the landscape and their uses, and also gives an up-to-date account of their status in Essex today. 87 pages, 19 photographs, maps and illustrations. ISBN 0 905637 15 1 (published 1990) PRICE £3.95
- No. 11. **Epping Forest - through the eye of the naturalist** edited by M. W. Hanson.
A book chronicling the complex land-use history of Essex's most famous Forest with modern accounts of its flora and fauna. ISBN 0 905637 16 X (published 1992) PRICE £10

OTHER

The Clay Tobacco-pipe in Britain by L. S. Harley. 51 page paperback covering the history and identification of these pipes. Special attention is given to pipes made in Essex and East Anglia. ISBN 0 905637 00 3 (second edition 1976) PRICE £2.50.

SPECIAL OFFER

Volume 6 (The Smaller Moths) and Volume 8 (The Larger Moths and Butterflies) are available together for £9.00 post free.