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Contents

Editorial	...	1
Specimens of Rosa for Identification	...	1
School's Conservation Work Saves Pool	...	3
The Life & Work of Edward Lhwyd	...	3

Cardiff, July, 1975

EDITORIAL.

Edward Lhwyd is probably a name respected by all Welsh botanists but little more than a name. He comes to life in Dr. Stearn's paper as a man indomitable in purpose against the misfortunes that beset him from before his birth and ceased not after his death. To this soft age he has much to teach besides botany. We are very grateful to Dr. Stearn for speaking at the 1974 A.G.M. and for allowing his paper to appear in the Wales Bulletin.

The short note on School Conservation work is again the story of determination against odds. Miss Hignett's brief record conceals the fact that she it was who saw with inspiration and carried the enterprise to triumph. Present day costs of production and postage restrict what is worthy of more expansion.

The note on collection of Wild Roses should be useful both to those who collect and those who have to cope with determinations. The list of desiderata may look formidable but if only partially filled should be helpful towards diagnosis.

SPECIMENS OF ROSA FOR IDENTIFICATION.

Rosa specimens are difficult to identify for many reasons, not least being the lack of forethought when collecting and pressing. The aim of this note is to indicate the field notes desirable at the time of collecting, and to provide guidance on the type of material to be gathered and its preparation.

The best time to collect is when the fruit is ripe but, before the sepals have fallen. Specimens in full flower are less good for identification. Specimens in between these stages, and immature midsummer shoots should be avoided.

The best specimens are those cut from the wood of the previous year with flowering or fruiting shoots, but a strip of bark with prickles can be substituted for main stem armament. Collect a few extra fruits, dried NOT pressed, or a few extra flowers cut off above the hypanthium and pressed open. The styler orifice can then be dissected without spoiling the specimen.

Make sure that both sides of the leaves are adequately shown and that petioles and stipules are not all obscured by overlapping leaves etc. Reasonable pruning is admissible. Sepals are very important diagnostically; care is needed to preserve them and not to distort their position in pressing.

Field Notes.

1. Habitat
2. Growing in shade/exposed
3. Approx. height
4. Suckering/not suckering
5. Habit : Arching/Scrambling/Strictly upright
6. Internodes : Straight/Zigzag
7. Armature if prickles are straight and thin on specimen is this uniformly the case throughout the bush ?
8. Scent of leaves : Nil/Sweetbriar/Turpentine ?
9. Petal colour Pink/Red-pink/White/Cream : /note any bicoloration

Gwynn Ellis
I.M. Vaughan

SCHOOL'S CONSERVATION WORK SAVES POOL.

The Welshpool High School Conservation Club was delighted to hear last July that the Flash, an area of lake and marshland which they had fought to conserve, will not now be drained to extend the school playing fields.

In a survey of the area 39 birds and 57 plants were recorded, including Oenanthe aquatica a new 10 Km square record and the rediscovery of Hottonia palustris in one of its only two stations in Wales. Support for conserving the area was given by local bodies including The Montgomeryshire Field Society and The Montgomeryshire Conservation Association, and also by national ones including the B.S.B.I., the C.P.R.W. and The National Museum of Wales. In May, work on the site was inspected by H.R.H. the Prince of Wales.

The planning committee of the new Montgomery District Council has recommended that the L.E.A. be asked to purchase the area for use as an outdoor laboratory and school nature reserve. It is hoped that the area will be used for practical ecological studies, and will also provide a place where the school conservation club can learn to cope with the problems and decisions of site management, which will be necessary to prevent too rapid colonisation of the water, and possible over-use of the area.

Mary Hignett.

THE LIFE AND WORK OF EDWARD LHWYD (1660 - 1709) CAMBROBRITON.

Based on an address to the Welsh Regional Meeting of the B.S.B.I. at Gregynog on 13th July 1974.

Lloydia, broadly defined, is a genus of the family Liliaceae with about 18 members. These are pleasing and interesting unobtrusive mountain plants widely distributed across the northern hemisphere. Defined narrowly, however, as by Greuter in 1970, the genus Lloydia has but one species, Lloydia serotina, which is a very special plant of Wales, being apparently confined in the British Isles to Snowdonia and rare even there. It was first discovered by Edward Lhwyd (1660 - 1709) 'in excelsis rupibus montis Snowdon', as

recorded by John Ray in 1696, and the name Lloydia coined by Salisbury in 1812 commemorates him. Lhwyd was an interesting, pleasing, relatively unobtrusive, mountain-loving person, so the plant and its eponym are fittingly linked, which would have pleased Linnaeus for he remarked in his Critica botanica that there is a charm in such a linkage that it will never fade from memory; he instanced, among others, Scheuchzeria which being grassy and alpine fittingly commemorates the Scheuchzer brothers, one eminent for his knowledge of grasses, the other for alpine plants.

Edward Lhwyd was an illegitimate son of Edward Lloyd of, Llanforda, near Oswestry, a Royalist colonel in the Civil War, for a time governor of Oswestry castle and commander of its Welsh garrison. A marriage arranged with Bridget Pryse, a Cardiganshire lady, never took place and he left her literally holding the baby. It may be that our Edward adopted after 1688 the more archaic Welsh spelling of his surname in order to distinguish himself from his father. At Oxford he was often called 'Floyd' and he himself latinized his name as Luidius.

Lhwyd stands as a founder of British palaeontology and a pioneer in the comparative study of the Celtic languages but for us as botanists his importance lies in his investigation of the Welsh and Irish floras. Brought up near the border town of Oswestry, he went to the Oswestry grammar school at the age of nine and probably became a pupil teacher before leaving in 1682 for the Welsh college in Oxford, Jesus College, at the age of 22. Evidently he had spent much time with his Welsh-speaking relatives in Montgomeryshire and botanized extensively in North Wales for by 1682 he had listed plants found there. He used to choose the most difficult way up a mountain because this yielded the most interesting plants and, being sharp-eyed, he thus discovered so many plants new to Wales, Britain and sometimes indeed to Europe.

The Ashmolean Museum was founded at Oxford in 1683, while Lhwyd was still a student. Its first Keeper was the antiquary and botanist Robert Plot (1640 - 1696) who made Lhwyd his assistant. Lhwyd succeeded Plot as Keeper in 1697 but long before this he was cataloguing the fossils in the Museum, a task which led to the compilation of his Lithophylacii Britannici Ichnographia (1698), probably his greatest contribution to science. At this period the origin of fossils was uncertain and highly controversial.

Lhwyd believed fossils to have grown within the rocks from air-borne germs washed into them. Nevertheless the patient work of men like Lhwyd in accumulating, classifying, describing, illustrating and naming fossils founded the science of palaeontology and, in association with geological evidence on the great age of the earth, led to the theory of evolution.

In 1693 plans were made for a new edition of William Camden's Britannia, a description of the counties of Britain, the first edition of which appeared in 1586, and Lhwyd undertook to revise the account of the Welsh counties. Since he already knew North Wales, he visited South Wales in 1693. The new edition appeared in 1695 and contained much information on the Welsh counties as well as a list of Welsh plants.

In the same year Lhwyd drew up a plan for a detailed survey of the antiquities and natural history of Wales which would involve several years of travel in Wales as well as comparative linguistic studies in Cornwall (where Cornish was still a living though doomed language) and later Ireland, Brittany and the highlands of Scotland. He published a prospectus of this survey, asking for subscriptions, but he received more promises than cash. In December 1696 he distributed some 4,000 copies of his 'parochial Queries', a printed questionnaire, to clergymen, schoolmasters and the gentry, throughout Wales and Cornwall, and he set out on his travels in 1697. Everywhere he encountered some mistrust and suspicion. In Wales he was believed to be a government spy collecting information for higher taxes. His clothes being shabby and travel-worn he was arrested in Cornwall as a suspected thief though quickly released when his true identity had been established. In Brittany he was taken for a British spy, imprisoned for a month, then deported. Nevertheless, regardless of these difficulties, he gathered a vast store of information which enabled him eventually to publish his Archaeologia Britannica especially concerned with linguistic matters. He intended to deal with natural history later but he contracted what appears to have been pneumonia and died in 1709, leaving the greater part of his hard-won knowledge in manuscript.

The rest of the story is a tragic one. Lhwyd was always an impoverished scholar, his salary at the Ashmolean Museum was a mere pittance and he got into debt over his travels.

He bequeathed all his manuscripts and collections to Jesus College and the University of Oxford but, to their lasting loss and shame, neither institution would buy them in order to pay his creditors. Lhwyd's collections then passed into private hands. One lot, consisting of 8 volumes of notes relating to Wales and 11 to Ireland and Scotland, and 8 volumes of drawings, which would be of inestimable interest to us today, was taken to London to be bound, the binder's shop in Covent Garden caught fire and all Lhwyd's work perished. The other part came into the hands of Thomas Johnes of Hafod, Cardiganshire, whose sad story is well told by Elisabeth Inglis-Jones, Peacocks in Paradise (1950, reissued 1971). Unfortunately in March 1807, when water was frozen hard, his great house at Hafod caught fire and with it perished the rest of Lhwyd's manuscripts. Thus the meanness of the two institutions to whom the penurious Lhwyd brought the honour of his scholarship, his enthusiasm and his industry and which could well have afforded to buy his collections for posterity led to their destruction. Not only Wales has been the loser. Lhwyd's scientific reputation thus rests upon his voluminous correspondence received and preserved by his friends, records of plants communicated by him to John Ray, his botanical specimens in the Buddle herbarium at the British Museum (Natural History) and in the Oxford University herbarium, and his Lithophylacii Britannici Ichnographia (1698) of which only 120 copies were printed.

Among Lhwyd's many botanical discoveries were the following first British records : Isoetes lacustris, Thalictrum alpinum, Cerastium arcticum, Potentilla rupestris, Lloydia serotina, Juncus triglumis. His first Welsh records included Asplenium septentrionale, A. viride, Adiantum capillus-veneris, Ceterach officinarum, Woodsia ilvensis, Cystopteris fragilis, Cardaminopsis petraea, Plantago maritima, Polygonum viviparum, Anaphalis margaritacea, Veronica spicata western race (V. hybrida). This is a remarkable list since by Lhwyd's time Britain was becoming one of the best botanized countries in the world (see pp.34 - 41 of the introduction to the Ray Society facsimile of Ray's Synopsis methodica Stirpium Britannicarum, 3rd. ed.). His new Irish records included Saxifraga spathularis, Arenaria ciliata and Daboecia cantabrica.

Most of Lhwyd's records were incorporated by the great English naturalist John Ray in his Synopsis methodica Stirpium Britannicarum, 2nd ed. (1696) and repeated in the third edition (1724) edited by Dillenius. Ray's high opinion of Lhwyd was quickly earned; examining the list of North Wales plants which Lhwyd had made before he went to Oxford, Ray commented 'this is the work of no trivial herbalist but a man of good skill in plants'. Another contemporary Leonard Plukenet described him as 'plantarum Britannicarum sagacissimus investigator'.

Lhwyd was a prolific correspondent and many of his letters to Ray, Lister and others have been preserved. A letter of his in the Cardiff Public Library (printed by R.T. Gunther in 1945) anticipates the reform of botanical nomenclature which Linnaeus effected in the next century. Plant names in Lhwyd's time and later not only designated the species but also attempted to provide details enabling it to be distinguished from all other known species within the genus. In large genera such names became very long indeed. Lhwyd wrote in his letter "I find that short titles or names of natural bodies are the most servicable, though they do not always distinguish the species from those that are congenerous with them; or express all their properties. I mean such titles as are composed of four or five and so to 8 words. J.Bauhin calls the English Saxifrage, Saxifraga Anglorum pratensis foliis foeniculi latiorib. radice nigra, flo. candido, semine foeniculi similis Silao, which is indeed an excellent title, but should all plants be thus named 'twould discourage many from becoming botanists. Hence I should judge it convenient (that men might more easily converse about natural things) to give them short titles, leaving the rest of their properties to their figures, descriptions, &c. or else (if the contrary seem necessary) to give them two titles: the one nominal shorter than this of Bauhinus; the other descriptory, longer, when requisite." This is precisely the reform that Linnaeus effected in 1753 when besides giving the usual diagnostic phrase name, e.g. Peucedanum foliolis pinnatifidis, laciniis oppositis he also provided a two-word name (binomial) for everyday use, e.g. Peucedanum silaus. The use of a single generic name followed by a single specific epithet, forming a two-word specific name, has persisted until the present day although the polynomial or diagnostic name became obsolete as a designation during Linnaeus's life-time. Although we can never know the full extent of Lhwyd's achievement and must mourn above all the loss of his drawings, enough of his work has persisted to give him lasting honour as a diligent investigator of the plants of Wales, a lover of its mountains and a student of its language when such as he were very few.

SOME SOURCES OF FURTHER INFORMATION.

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