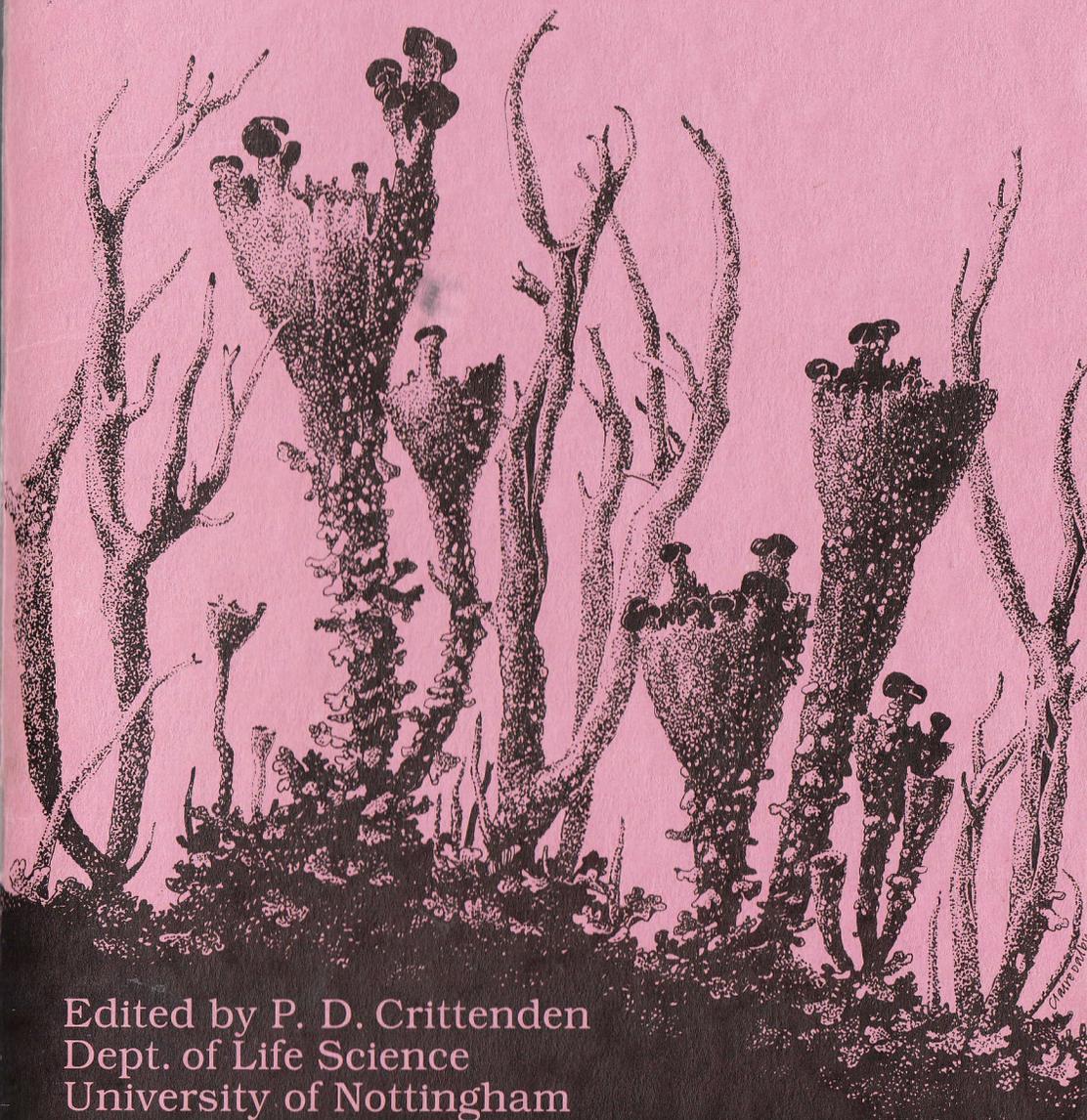


BRITISH LICHEN SOCIETY BULLETIN No.73 Winter 1993



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BLS FIELD MEETING: SLOVAKIA 28 JUNE - 6 JULY 1993

Background

The British Lichen Society organised its first ever society field meeting in eastern Europe, the original idea of Peter Scholz (Germany) and Peter James (England) and most ably organised by Ivan Písút and Anna Lackovičová (Institute of Botany, Bratislava). A total of seventeen participants attended the field trip at various stages including also Eva Lisická, Anna Guttová and Zuzana Kyselová (Slovakia), Urszula Bielczyk and Hanna Wójciak (Poland), Edit Farkas (Hungary), Jiří Liška and Antonín Vežda (Czech Republic), Josef Poelt (Austria), and Trevor Duke, Peter James, Sheila Murphy, William Purvis and Amanda Waterfield (England). That the BLS should be involved in this exciting new venture was all the more appropriate as this was the bicentenary of the visit 200 years ago, when the British pioneering explorer, Robert Townson recorded the first lichens from the High Tatra e.g. *Lichen tartareus* Wulf. (*Squamarina lamarckii*), *L. tauricus* Wulf. (*Thamnolia vermicularis*), *L. cucullatus* Bell. (*Cetraria cucullata*), *L. elegans* Link (*Xanthoria elegans*) and *L. miniatus* (*Dermatocarpon miniatum*).

The major objectives of the field meeting were for a mutual exchange of ideas and to form links between members of the BLS and lichenologists in Slovakia. The trip was a great success, owing to the tremendous effort of Ivan and Anna who are warmly thanked. The excellent choice of study areas and the broad range of expertise from continental to oceanic lichenology as well as the fine lodgings were bonuses. The meeting was enjoyed by all and everyone learned at least some new lichen species. Although the ravages of air pollution have certainly had a great effect on the lichen communities over the past 40 years, there remains much to be discovered and in certain sheltered, protected areas relict populations still exist that merit high conservation priority.

Itinerary

The British participants were met at Vienna Schwechat airport by Ivan and Anna and we drove the short distance to Bratislava in a hired Ford minibus 'Ad Astra' with a trailer in tow. The concrete buildings of the western boundary of Bratislava facing bleakly towards Austria appeared a trifle forbidding, particularly with the unseasonably leaden grey sky and biting wind, but this was more than compensated by our warm welcome in Slovakia. Besides, the weather improved greatly the following day and

persisted until our departure, and we were also later privileged to visit some fine old towns with beautiful architecture. A brief stop at the Slovak National Museum in Bratislava allowed us to collect essential provisions and more passengers. We continued north east to the quaint town of Svätý Jur (Sankt Georgen), where we paid homage at the great lichenologist A. Zahlbruckner's birth place and were officially welcomed by the Director of the Botanical Institute of Bratislava (Fig 1). A splendid meal was had in a nearby tavern of local sheep's cheeses and meat washed down with delicious local wine. Our final destination that day was the palatial castle, Smolenice, belonging to the Slovak Academy of Sciences, where we were to spend the next couple of days exploring lowland limestone (sites 2 and 4) and dolomite (site 3), as well as quartzite (site 5). Unfortunately, we had



Fig. 1 The Director of the Institute of Botany (Bratislava), local authorities and some BLS participants in front of A. Zahlbruckner's birth place, Svätý Jur (Sankt Georgen). From left to right: F. Hindák (Presidium of SAS), T. Duke, F. Tomaškovič, S. Fronc (Mayor), A. Lackovičová, E. Farkas (kneeling), P. James, S. Murphy, O. Gašpariková (Director), A. Gutová, A. Waterfield, I. Pišút and E. Lisická.

to vacate our sumptuous abode on 30 June owing to the imminent arrival of the President of Slovakia; our third night was thus spent in Hotel Lev (Levice). On 1 July we travelled to the High Tatra Mountains. Our itinerary was ambitious. Not only did we face a long drive (c. 300 km) but

we also had three sites, notably andesite boulders (site 6), rhyolite boulders (site 7) and a mine spoil heap (site 8) (Fig 2), to fit in *en route* before arriving at Stará Lesná, near Tatranská Lomnica, our final base. In the foothills of the High Tatra Mountains, the last European stronghold of the European brown bear (700 are said to remain), we were well situated to explore high altitude siliceous (sites 9 and 10) and calcareous substrata (site 13) as well as lowland travertine (site 11). An additional brief visit was made to Sivá Brada (site 12), a nature reserve with geysers and a spring. Although no lichen collections were made at this popular site, people queued up to collect mineral water, including some members of our group. The water was sulphurous and smelled strongly of rotting vegetable matter, but was cold and not unpleasant to taste! After a long day examining floras on travertine, we visited the well preserved ruins of Spišský Hrad castle. A brief visit was also made on another occasion to the beautiful town of Levoca where we visited the fine church of St James with its famous wooden Gothic altar, the highest in the world (18.6 m). On the penultimate evening, we were treated to a splendid farewell meal of traditional festive Slovak food (Halušky and Pirohy with Bryndza) and entertained by a slide show presented by Peter James.

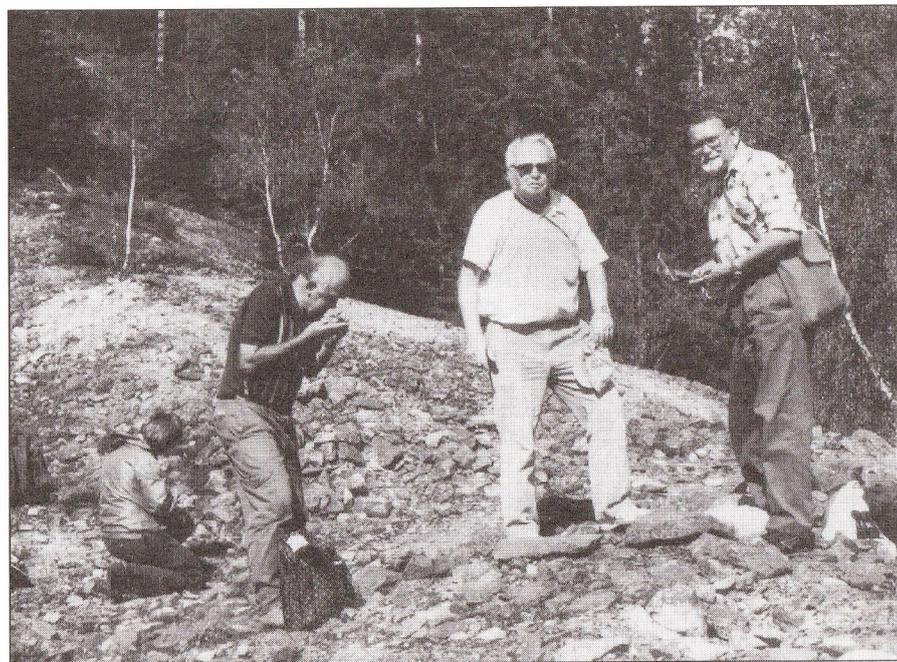


Fig. 2 Examining lichens on old copper mine slag heaps above Špania Dolina village. From left to right: Edít Farkas, Josef Poelt, Antonín Vězda and Ivan Pišút.

The following account is a brief summary of the vegetation studied. Descriptive accounts of the vegetation with details of new records and fuller species lists will be published elsewhere. Here reference is made to the major communities observed, as well as to some of the more interesting species discovered. The habitats studied can be divided for convenience into lowland and montane, including calcareous and siliceous rock communities and epiphytic communities.

List of localities Visited

Malé Karpaty Mountains

1. Smolenice castle, 350 m alt., 29.6.1993.
2. Southern slopes of Pohanská hill above Plavecké Podhradie village, limestone, 300-400 m alt., 29.6.1993.
3. Holý Vrch hill 1 km northwards of Tristín village, dolomite, 250-300 m alt., 29.6.1993.

Tribecské Vrchy Mountains

4. Zoborska Lesostep protected area on south slope of Plieška hill near Nitra town, limestone, 350-400 m alt., 30.7.1993.
5. Studený Vrch hill, on quartzite, 400-450 m alt., near Jelenec village, 30.6.1993.

Pohronský Inovec Mountains

6. SE slopes of Skala hill near Kozárovce village, andesite, 180-220 m, 1.7.1993.

Stiavnické Vrchy Mountains

7. Kamenné More protected area on slopes of Kamenná hill near Vyhne village, rhyolite boulders, 330-490 m alt., 1.7.1993.

Nízke Tatry Mountains

8. Old copper mine slag heaps above Špania Dolina village, 740-770 m alt., 1.7.1993 (Fig 2).

Vysoké Tatry Mountains (High Tatra)

9. Furkotská dolina valley, granite, 1800-2200 m, 2.7.1993.
10. Bielovodská Dolina valley, granite, 100-1500 m, 4.7.1993.

Hornádska Kotlina Basin

11. Ostrá Hora protected area, travertine, 600 m alt. and Dreveník hill, travertine, 600 m alt., both near Spišské Podhradie village, 3.7.1993.

12. Sivá Brada hill near Spišské Podhradie village, travertine, 460 m, 3.7.1993

Belianske Tatry Mountains

13. Skalné Vráta, limestone, 1500-1600 m alt., 5.7.1993.

Lowland limestones, dolomite and travertine

General flora and fauna

The phanerogamic flora at many of the investigated sites was especially beautiful. Unusually, the season had been rather wet and many plants were in full flower, a diverse flora in which members of the Caryophyllaceae were prominent with *Dianthus carthusianorum*, *D. lumnitzeri*, *Petrorhagia prolifera* and *Silene otites* especially abundant. Other plants noted included *Asperula cynanchica*, *Campanula patula*, *Stachys recta*, *Eryngium campestre*, *Dictamnus albus*, *Scabiosa ochroleuca*, *Sempervivum soboliferum*, *Veronica spicata* and the beautiful blue annual delphinium, *Consolida ambigua* with several bulbous plants including *Allium flavum*. In the eastern area at Dreveník, near Spišský Hrad castle, the striking blue *Campanula carpatica* was frequent, whilst *Pulsatilla slavica* was in seed. Xerothermophilous liverworts were frequent at Zoborska Lesostep (site 4), including *Mannia fragrans* and *Riccia bischoffii*.

Amongst the animals, a splendid male lizard, *Lacerta viridis* was seen at close quarters, its vivid green-yellow breeding colour evidently designed to attract a mate. A mantid and many other insects were also observed.

Lichen communities

These were among the most diverse studied. In common with limestones in Britain, a number of faithful species were present at virtually all the sites, though each site usually supported a number of additional taxa specific to that habitat. The majority of the constantly recorded species were essentially crustose: *Acarospora cervina*, *Aspicilia radiosa*, *A. calcarea*, *Caloplaca chalybaea*, *C. coronata*, *C. decipiens*, *C. ochracea*, *C. polycarpa*, *C. saxicola*, *C. teicholyta*, *Candelariella medians*, *Fulgensia fulgens*, *Lecanora pruinoso*, *Leproplaca xantholyta*, *Placynthium nigrum*, *Rinodina bischoffii*, *R. calcarea*, *Rinodinella controversa* and *Toninia sedifolia*. *Placocarpus schaeferi*, a parasitic lichen growing initially on *Lecanora muralis*, was frequent.

Amongst the macrolichens, *Cladonia convoluta*, *C. pocillum*, *C. symphyarpa*, *C. subrangiformis*, *Squamarina cartilaginea* and *Lecanora*

muralis were frequent; the last ± confined to limestones was unusual in habitat, as in Britain it prefers more siliceous habitats. As this species also occurs on limestones in the Alps, it is possible that there might be a genetic basis for the observed plasticity. Several xerothermophilous species were seen, notably *Cladonia magyarica* (site 4) and *Parmelia somloënsis* (sites 4 & 6), though these seemed to have decreased in abundance, possibly through a reduction in grazing pressure. *Xanthoria papillifera*, with its typically papillate thallus, was seen at site 11 at its westernmost occurrence in the Carpathian Mountains.

An unusual feature of the limestones for the British participants was the scarcity of pyrenocarpous lichens, particularly endolithic species. *Acrocordia conoidea* was, however, frequent on sheltered vertical surfaces at Ostrá Hora (site 11); species with blue-green photobionts were also rather rare.

Lowland siliceous substrata, including mine spoil

General flora

Mixed, deciduous, broad-leaved woodland with a range of phorophytes dominated by *Quercus cerris* and *Q. robur*, frequently intermixed with *Sorbus aucuparia* and *Betula pendula*, and with a species-poor ground cover comprising *Calluna vulgaris*, *Deschampsia flexuosa*, *Genista tinctoria* and *Vaccinium myrtillus* was a feature of the most siliceous habitat investigated (site 5).

Lichen communities

The lichen communities on quartzite were the least diverse of those examined, partly due to the effects of air pollution. At Studeny Vrch Hill (site 4), quartzite boulders and outcrops carried sparse communities. The best developed communities occurred on bird-perching stones supporting *Acarospora fuscata*, *Aspicilia caesiocinerea*, *Candelariella coralliza*, *Parmelia saxatilis*, *P. conspersa* and *Ramalina capitata*. Some vertical outcrops, perhaps flushed with nutrients, were moderately well covered, supporting *Hypogymnia farinacea*, *Lasallia pustulata*, *Lichenothelia scopula*, *Protoparmelia picea* and *Umbilicaria hirsuta*. Interestingly, here the *Protoparmelia* formed large thalli to several cm in diameter, possibly due to the effect of decreased competition due to air pollution. *Chrysothrix chlorina* occurred in sheltered underhangs. *Rhizocarpon geographicum* was rare. Terricolous communities included a range of *Cladonia* species, *Placynthiella icmalea* and *Pycnothelia papillaria*. Andesitic outcrops at Skala hill (site 6) were significantly richer with a higher percentage cover (c. 75%). Here *Parmelia* species were conspicuous including *P. pulla*, *P.*

verruculifera and the local speciality *P. somloënsis*. A colourful mosaic of crustose species including *Acarospora fuscoatra*, *Aspicilia praeradiosa*, *Candelariella coralliza*, *Lecanora argopholis*, *L. garovaglii*, *Lecidea fuscoatra*, *Rhizocarpon geminatum* f. *citrinum*, *R. geographicum* and *R. viridiatrum*, together with an unidentified species of *Aspicilia*, was present.

The rhyolite boulder field at Kamenné More (site 7) forms an impressive landscape. This was the best siliceous habitat examined, with a diverse flora, though crustose species dominated and fruticose lichens were rare. Amongst the macrolichens, species of *Parmelia* were well represented, including *P. conspersa*, *P. disjuncta*, *P. incurva*, *P. omphalodes*, *P. pulla*, *P. somloënsis* and *P. stygia* which were frequent and *P. panniformis* rather rare. *P. stygia* and *P. incurva* here reach their southernmost limit and the lowest altitude in the west Carpathians. Many crustose species were present, including *Buellia badia*, *Caloplaca subpallida*, *Chrysothrix chlorina*, *Lecanora orosthea*, *L. rupicola*, *Lecidea paupercula*, *L. plana*, *Miriquidica deusta*, *Pertusaria corallina*, *Psilolechia lucida*, *Rhizocarpon geographicum*, *R. lecanorinum*, *R. plicatile*, *R. viridiatrum*, *Rimularia insularis* and *Tephromela grumosa*.

The steep south-facing slopes of the mine site above Špania Dolina (site 8), appeared green from a distance owing to the abundance of *Rhizocarpon lecanorinum* and *Lecanora subaurea*. Several additional taxa characteristic of metal-rich substrata occurred, including *Acarospora montana*, *A. sinopica*, *Candelariella vitellina* (atypically brown-coloured), *Lecanora handelii*, *Lecidea fuscoatra*, *L. inops*, *L. plana*, *Porpidia tuberculosa*, and *Rhizocarpon furfurosum* (rare). Macrolichens were rare, though *Cladonia chlorophaea*, *C. macrophylla* and *C. mitis* were present. This is the type locality of *Lecanora chalcophila* described by Antonín Vezda; this species was very rare and evidently more frequent on the cooler, northern slopes, which alas we had no time to explore.

Montane siliceous communities

General flora

The granites studied in the High Tatra in Furkotská Dolina valley (site 9) and Bielovodská Dolina valley (site 10) support a relatively limited higher plant flora in common with siliceous substrata in many areas. At the upper limit of tree growth (c. 1900 m alt.) a krummholz of *Pinus mugo* gives way to a herb-rich vegetation. Frequent species were *Campanula alpina*, *Leucanthemopsis alpinae* var. *tatrae*, *Luzula alpinopilosa*, *Pedicularis*

verticillata, *Potentilla aurea*, *Pulsatilla alba* and *Soldanella carpatica*, whilst *Androsace obtusiloba*, *Armeria alpina* and *Gentiana frigida* were rare.

Lichen communities

The granites supported a predominantly crustose lichen flora including many widely distributed siliceous elements: *Aspicilia myrini*, *Fuscidea austera*, *Immersaria athrocarpa*, *Lecanora polytropa*, *Ophioparma ventosa*, *Orphniospora atrata*, *Protoparmelia badia*, *P. cupreobadia*, *Rhizocarpon alpicola*, *R. leptolepis*, *R. subgeminatum*, *Sporastatia testudinea*, *Tephromela agalaea* and *T. armeniaca*. *Micarea erratica* was locally frequent on pebbles (site 10). *Lecidea distans* was noted as parasitic on *Orphniospora atrata* (site 9). Other saxicolous species present at Furkotská, include several parmelioid species (eg *Allantoparmelia alpicola*, *Hypogymnia atrofusca*, *H. intestiniformis*, *Parmelia stygia*) and a few other macrolichens: *Cornicularia normoerica*, *Umbilicaria cylindrica*, *U. deusta*, *U. rigida*, *U. torrefacta*, though these were present mostly as rather small thalli to c. 1 cm diam.

Terricolous communities (site 9) included *Cetraria islandica*, *C. cucullata*, *C. nivalis*, *Cladonia rangiferina* and *Lecidoma demissum*. The fruticose species were mostly rather small and Jiří Liška claimed that the *Cladonia* species had become less frequent in recent years.

Montane limestones

General flora

The montane limestones (with siliceous intrusions) studied were the dramatic south-facing cliffs on Skalné Vráta (site 13), a site of restricted access. The herbaceous vegetation was diverse, at lower altitudes supporting mostly tall herbs: *Adenostyles alliariae*, *Aster alpinus*, *Campanula glomerata*, *Carex sempervirens* subsp. *tatrorum*, *Cicerbita alpina*, *Cortusa mathioli*, *Delphinium oxysepalum*, *Dianthus hungaricus*, *Erysimum hungaricum*, *Gymnadenia odoratissima*, *Helianthemum grandiflorum*, *Polygonum bistorta*, *Senecio subalpinus*; whilst higher up (above c. 1600 m), *Androsace chamaejasme*, *A. lactea*, *Astragalus alpinus*, *Biscutella austriaca*, *Gentiana clusii*, *Myosotis alpestris*, *Oxytropis carpatica*, *Primula auricula*, *Saxifraga adscendens*, *Tofieldia calyculata* and *Traunsteinera globosa* occurred.

Lichen communities

The cliffs supported a diverse crustose lichen flora typical of similar habitats in the central Alps. *Caloplaca* species were well represented including *C. arnoldii*, *C. epiphyta*, *C. flavovirescens*, *C. proteus* (like a deep

red *C. cirrochroa*) and several other yet unnamed species. *Aspicilia candida*, *Catillaria lenticularis*, *Dermatocarpon intestiniformis*, *Dirina repanda*, *Lecanora agardhiana* subsp. *sapaudica*, *L. bicincta* var. *sorediata*, *L. conferta*, *Placynthium filiforme*, *Protoblastenia calva*, *Rhizocarpon pulverulentum*, *Squamarina gypsacea* var. *subcetrarioides*, and *Toninia diffracta* were frequent. Amongst lichen parasymbionts, *Buellia nivalis*, *Verrucaria elegantaria* and *V. helveticorum* were found growing on *Xanthoria elegans*, and *Verrucaria aspiciliicola* on *Aspicilia*. Rare species confined to this environment include *Squamarina lamarckii*, *Fulgensia schistidi*, and *Teloschistes contortuplicatus* overgrowing mosses, and at 1600 m *Lecanora admontensis* and *L. reuteri* were found.

Epiphytic communities

Lichen communities

The corticolous communities were in most areas the least diverse studied, owing to the widespread impact of air pollution. In the lowlands no site was specifically chosen to study corticolous communities, though in the grounds of Smolenice castle, *Physcia biziana* var. *aipolioides* was noted as being frequent. *Phlyctis argena* was observed on several occasions (e.g. site 5) on *Juglans* and *Quercus cerris*, together with *Hypocenomyce scalaris*, *Parmelia caperata*, *P. exasperatula*, *P. sulcata*, *P. tiliacea* and *Pertusaria amara*.

Bielovodská Dolina valley (site 10) in the high Tatra was however, considerably richer in epiphytic species, though even here there have been dramatic changes over the past 40 years with fruticose and foliose species becoming far less conspicuous. In this sheltered, moist valley adjacent to the Polish border, there is a variety of phorophytes. *Alnus incana* is frequent along the river and higher up there are evergreen forests with *Picea* predominant. *Alnus* supports a range of crustose species with several puzzling sterile crusts, including *Buellia griseovirens*, *Catillaria pulvereae*, *Fuscidea viridis*, *Pertusaria pupillaris* and *Trapelia corticola*. *Pertusaria ophthalmiza*, *Buellia arborea*, *Chrysothrix candelaris*, *C. chrysophthalma*, *Chaenotheca furfuracea* and *Lopadium disciforme* occur on *Picea*, as well as the continental macrolichens *Cetraria laureri*, *Evernia divaricata* and *Hypogymnia vittata*, which were local. *Usnea* species were rare, best developed stands occurring on dead or decaying *Picea*, often together with *Bryoria bicolor* and *B. nadvornikiana*. *Hypocenomyce praestabilis* and *H. sorophora* occurred on wood, whilst rotting stumps support a special flora with several species of *Cladonia*, including *C. cenotea*, and *Vaccinium myrtillus* carried *Fellhanera subtilis*. The non-lichenized *Sarea resiniae* and *Resinocephalus* occur on resin of *Picea*. *Lobaria pulmonaria* was found

on rock. Many specimens remain to be identified from this important area which must merit high conservation priority in view of the presence of a relict *Lobarion* community.

In the High Tatra at higher altitudes (c. 1900 m), on a krummholz of *Pinus mugo* (site 9), *Cetraria pinastri* and *Parmeliopsis ambigua* were frequent whilst the arctic-alpine *Anzina carneonivea* and *Cetraria sepincola* were occasional.

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OTHER OVERSEAS MEETINGS

Yokohama and Kyoto, Japan, 28 August-7 September 1993

The XV International Botanical Congress took place in Yokohama, Japan, between 28 August and 3 September (preceded by the nomenclatural sessions on 23-27 August). It was held at the Congress Centre of Pacifico Yokohama (Fig 1), a vast and impressive modern complex on the Yokohama waterfront that comfortably absorbed the 3000 or so delegates. Of the 215 symposia held three were dedicated to lichenological topics: Taxonomy and Phytogeography of Lichens (organisers: Ingvar Kärnefelt and Hiroyuki Kashiwadani), Experimental Biology of Lichens (organisers: Margalith Galun, Minoru Nakanishi and Yoshikazu Yamamoto) and Lichen Substances (organisers: Isao Yoshimura and Sigfried Huneck). There were, in addition, in excess of 20 posters on lichen topics. The lichen symposia all took place on Sunday 29, the first day of the lecture programme, and on the Sunday evening, by invitation of Isao Yoshimura, lichenologists were escorted to a local Japanese restaurant where we were treated to a succession of superb Japanese and Chinese dishes. The subsequent days at the Congress were of little lichenological interest although sessions on such topics as bryophyte biology, air pollution effects, nitrogen-fixing symbioses, climate change and tropical forest conservation attracted some

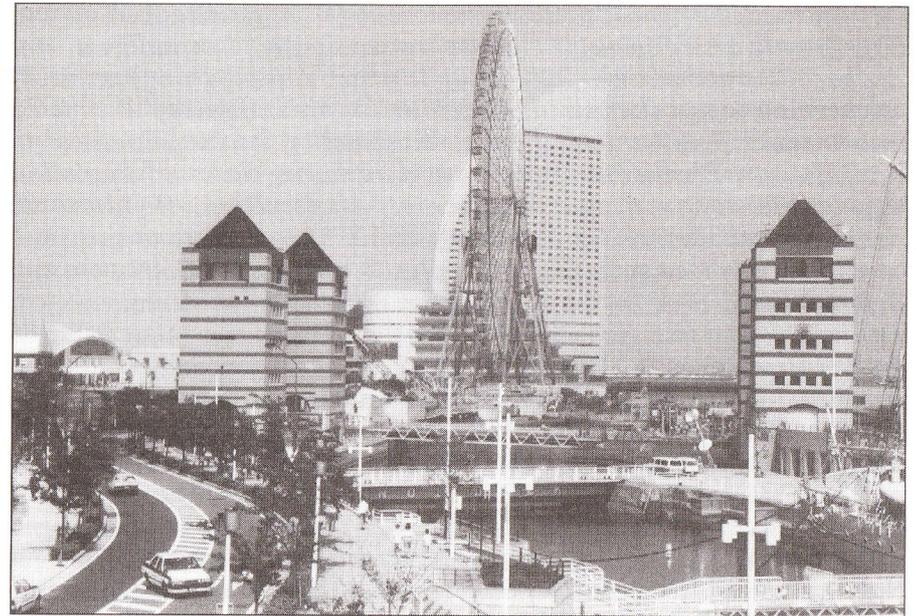


Fig 1. Pacifico Yokohama. The curved tower of the Intercontinental Hotel stands immediately above the Congress Centre overlooking Tokyo Bay. The Ferris wheel in the foreground is as big as it looks!

of us. A number of lichenologists visited the lichen herbarium of the National Science Museum, Tokyo. However, some of the collections had been moved to Tsukuba along with Dr Koshiwadani's main office, and the rest will be moved there next year.

A post-congress lichen excursion took place from 4-5 September in conjunction with the Lichenological Society of Japan. The party of 42 participants (27 from Japan, 15 from N America and Europe) was led by Koza Yoshida and Hiroshi Harada. We travelled from Yokohama by bus into the mountain area of Shinshu (Nagano Prefecture, central region of Honshu Island), in which Mts Kinpo (2595m) and Kobushi (2483m) are particularly popular with mountaineers. A short field meeting was held in mixed forests of larch (*Larix kaempferi*) and deciduous hardwoods (eg *Betula platyphylla* var. *japonica*, *Quercus crispula*) around the Kinpo-sanso Lodge at 1570m alt in the Mawarime-daira valley, Chichibu-Tama National Park. By following a steep track up the hillside from the lodge we reached rocky outcrops which provided panoramic views over the valley. Lichens to be found in this area include *Flavoparmelia caperata*, *Lasallia pensylvanica*, *Nephromopsis ornata*, *Pannaria conoplea*, *Parmelia cochleata*,