

157. Machapuchare, "fish-tail" twin-peaks from Dovan , a Himalayan Matterhorn, but rather higher.
158. A little log-bridge along the path, Jacob always first!
159. Large white lily, *Lilium* ??*wallichianum*, soon to open its flowers.
160. *Pichisermollodes stewartii* on tree, long, up-swept pinnae (directed towards frond-tip); with *Lepisorus mehrae* on upper left, Dovan, 2500 m.
161. *Pichisermollodes stewartii*, with its green rhizome and contrasting dark scales and apical lamina-lobes long and upswept towards the frond-apex.
162. *Dryopteris juxtaposita* (well lobed individual), Dovan.
163. Trekking-map sign-post at Dovan Lodge, walking times - unless looking at ferns!
164. *Polystichum thomsonii*, showing variation in degree of lobing etc., Dovan to Himalaya Lodge, c. 2700 m.
165. The little Grammitid epiphytic fern, *Micropolypodium sikkimense*, has long, stiff dark bristles all around the edge of the frond, Dovan to Himalaya lodge.
166. Another little Grammitid, *Tomophyllum donianum* (misapplied name "Ctenopteris subfalcata" in India), Dovan to Himalaya Lodge.
167. The abundant epiphytic filmy fern in moss, *Hymenophyllum tenellum* (misapplied name "H. polyanthos" from the Americas), usually with emarginate, notched lobe-apices, Dovan.
168. Large stand of miniature prickly *Polystichum stimulans* (it does!) under rock in forest, Dovan.
169. *Polystichum stimulans* on mossy rock, near Dovan.
170. Katoella ("Araiostegia") *beddomei*, pinkish lilac rachis, long delicate fronds, near Dovan.
171. Katoella *beddomei*, rhizome with large, loose, overlapping scales, aptly described by Hope as like (white-) grape-skins, forest above Dovan, c. 2700 m.
172. A small plant of *Coniogramme procera*, which can easily reach 6 ft. tall, long pinnae with many short pinnules, when crushed smells strongly like Elder tree (*Sambucus edulis*), above Dovan.
173. Beautiful young frond of *Cyrtomium anomophyllum*, approaching *C. macrophyllum*, but with teeth near pinna-apices and tiny, dark-centred indusia, forest above Dovan, 2700 m.
174. *Peranema aspidioides* (Dryopteridaceae, but *Peranema* is certainly not a *Dryopteris* as suggested cladonomically in China), sori like miniscule Christmas baubles, hanging below frond on tiny stalks, above Dovan.
175. *Vittaria* ("Haplopteris") *taeniophylla* (syn. *V. himalayensis*), elongated sorus submarginal, superficial, with no inner lip; when fronds are rolled up in dry weather, soak in a bucket of water before pressing as the sorus must be seen for identification, Dovan to Himalaya Lodge.
176. *Onoclea* (syn. *Matteuccia*) *intermedia*, fronds taper to base, dimorphic with very distinctive old fertile fronds with narrower, thick pinnae, Dovan to Himalaya Lodges, c. 2800 m.
177. *Onoclea intermedia*, tapering narrowed frond-bases.
178. *Onoclea intermedia* crown-rhizome, when not fertile can be mistaken for a *Dryopteris*.
179. *O. intermedia*, fertile pinnae, Dovan to Himalaya Lodges, c. 2800 m.
180. *O. intermedia*, like a lobed *Dryopteris dickinsii*, forest edge above Dovan, 2800 m.
181. *Deparia allantodioides*, light forest above Dovan.
182. *Polystichum piceopaleaceum*, dense forest above Dovan. Typical of section *Metapolystichum* (which includes *P. setiferum* of Europe).
183. *Polystichum piceopaleaceum*, pinnules and sori from beneath.
184. *P. piceopaleaceum* close-up of top surface.
185. *Polystichum piceopaleaceum*, with scattered black scales on stipe, and rounded-rhombic pinnules.
186. *P. piceopaleaceum*, frond showing typical pinnule-shape.
187. *P. piceopaleaceum*, pinnules and sori close-up.
188. *Lepisorus nudus*, fronds arise rather well apart in contrast to *L. contortus*, forest above Dovan.
189. *Lepisorus nudus* sori.
190. *Lepisorus nudus*, concolorous grey-brown rhizome-scales, above Dovan Lodge.
191. *Athyrium atkinsonii*, fronds well apart on rather thin creeping rhizome, pink stipe and rachis, above Dovan, 2800 m, young fronds are often used as a spinach.
192. *A. atkinsonii*, pinnules symmetrical about their axes, unlike in *A. fimbriatum*, with which it is often confused.
193. Terrestrial Helleborine Orchid, *Epipactis* sp., above Dovan towards Himalaya Lodge, c. 2800 m.
194. *Asplenium laciniatum* subsp. *tenuicaule*, more finely dissect pinnae with more stipitate segments than subsp. *laciniatum*, above Dovan, c. 2800 m.
195. Large *Polystichum nepalense*, forest above Dovan, c. 2800 m.
196. *Polystichum nepalense*, but pinnae becoming lobed, slightly towards *P. manmeiense*; it's worth checking spores of such plants in case they might be hybrids as I once found one that was in the west Indo-Himalaya. Something more complicated seems to be going on in this species!
197. Forest path, lined by *Dryopteris wallichiana* crowns, above Dovan, c. 2800 m.
198. "Hang on a sec!" "Oh no, not ANOTHER *%!@X*!* FERN-STOP!!". Fern-forest paradise (for the initiated!), above Dovan.
199. *Polysticho-Dryopteridetum paradisicum*! *P. longipaleatum* and *D. wallichiana*. Forest above Dovan, 2800 m.
200. Oh for a fern-garden like this one!!
201. *Cystopteris moupinensis*, a smaller relative of *C. sudetica* of Europe, above Dovan.
202. A mass of *Cystopteris moupinensis* on a mossy boulder.
203. *C. moupinensis* frond, above Dovan, c. 2800 m.
204. The minute *Asplenium capillipes* subsp. *capillipes*, small, crisp, dark-green fronds with acute lobes and some tiny proliferous bulbils on the lamina, base of mossy rocks above Dovan, 2800 m.
205. Ban Devi (Annapurna Forest Goddess) Mandir (temple) and prayer-flags, on path from Dovan to Himalaya Lodges.
296. *Lepisorus mehrae* (misapplied name: "L. kashyapii", nom. nud.), very superficial or aerial, thick rhizome, forest above Dovan, 2800 m.
207. *Lepisorus mehrae*, small brown laminar microscales beneath, jagged and with long, narrowly aristate, hair-like, zig-zag apices.
208. Young *L. mehrae* frond with hair-tipped frizzy, brown laminar microscales, before many of them drop off.
209. *Lepisorus scolopendrium* (Buch. Ham. ex D.Don) Ching, rhizome mostly on or within the substrate, laminar microscales darker, or black and without the long, crinkly, zig-zag, hair-like apices of *L. mehrae*, above Dovan.
210. *L. scolopendrium* laminar microscales, darker and without crinkly apices.
211. *L. scolopendrium*, the rhizome (here extracted) is attached within the substrate by thin and branched roots, not the stiff, bare stilt-roots of *L. mehrae* (sorry about the dodgy focus!).
212. *Polystichum neolobatum*, dense pinkish stipe-scales, smallish and rather narrow-fronded individual plant, very dense, broad stipe-scales, above Dovan.
213. *Polystichum neolobatum*, chance bifurcation of a frond, happens occasionally in many ferns, not of taxonomic or nomenclatural significance, above Dovan, c. 2800 m.
214. *Polystichum neolobatum* full-sized, Dovan to Himalaya Lodges.
215. Our party taking a rest-break at a chautara on the way to Himalaya Lodge.
216. Wild strawberry snack? - but these ones disappointingly had no taste at all, unlike the different species further down on the way.
217. The summit of Machapuchare Himal (6993 m) almost right over us now, above the snow-patched eastern valley ridge.
218. *Onychium cryptogrammoides* subsp. *cryptogrammoides* ("O. contiguum" sensu Hope, nom. superfl. for *O. lucidum*), pale stipe with blackish base, frond delicate, very foliose and three-dimensional, not flat as the pinnae are out of plane, near Himalaya Lodge, 2800 m.
219. The little-known *Adiantum wattii* (syn. *A. refractum*, *A. levingei*), like a high-altitude *A. capillus-veneris*, but rounded crenations on sterile segments or no teeth at all, many long sori, smaller basal and larger later fronds in some plants, near Himalaya Lodge, 2900 m.
220. *Adiantum wattii*, some sori can be very long, all around edge of lobe or segment.
221. *Adiantum wattii*, closer.
222. *Adiantum wattii*, typical habitat at base of overhanging rock, near Himalaya Lodge.
223. *Adiantum wattii*, young fertile frond, close-up.
224. A small *Adiantum pedatum*, fan-shaped frond, rounded segment-tips, Professor S.C. Verma's "pleasing green form" colour, as opposed to *A. myriosorum*, with grey-green fronds.
225. *Adiantum pedatum* segments.
226. *Adiantum pedatum*, close up of segments of a larger frond.
227. *Adiantum pedatum*, *A. wattii* and *Athyrium rupicola*, at base of a rock, Himalaya Lodge.
228. *Dryopteris* probably the rare *D. costalisora*, but it might perhaps only be a small *D. panda*, instead? Cytology can decide with a proper squash-count (diploid versus tetraploid), semi-open grassy path-bank near Himalaya Lodge.
229. Himalaya Lodge at the top of the forest zone, 2900 m.
230. Relaxing break at Himalaya Lodge, though more expensive to eat there compared to down below.
231. Route-map sign-board at Himalaya Lodge, commando-style route timings compared to our gentler ferny ramble!
232. Attractive young *Rhododendron* leaves, white beneath, near Himalaya Lodge.
233. *Aleuritopteris leptolepis* (misapplied name *Cheilanthes dalhousiae* auct., nom. rejic.), never has white farina powder beneath, above Himalaya Lodge, 2900 m.
234. *Aleuritopteris leptolepis*, no farina or scales beneath.
235. *A. leptolepis* under-surface, above Himalaya Lodge.
236. *Polystichum sinense*, white hairs and fibrils, narrow-based segments, an allotetraploid, half way between *P. piceopaleaceum* agg. and *P. prescottianum* agg., above Himalaya Lodge, 3000 m.
237. *Polystichum sinense* (syn. *P. wilsonii*), young fronds with whiteish scales and hairs, beside path above Himalaya Lodge, c. 3000 m.
238. *Polystichum sinense*, close-up of pinnae, covered in white fibrils.
239. *P. sinense* underside, pale scales and fibrils.
240. *P. sinense*, scales at stipe-bases.
241. *P. sinense*, attractive white-hairy young fronds coming up, above Himalaya Lodge.
242. *P. sinense*, young frond shepherd's-crook apex close-up.
243. The beautiful white-hairy young fronds of *Polystichum sinense*, all along path from Himalaya to Deurali Lodges, 3000 + m.
244. *P. sinense*, mid part of fully expanded frond.
245. *Polystichum centronepalense*, a new species, lower half of leaf, then only known from this locality, though not uncommon there about 3000 m, Himalaya to Deurali Lodges. I have now found that it was known under a later name (now synonymised) from S.W. China as well, so is not endemic to Nepal - a case of "temporary endemism".
246. *Polystichum centronepalense*, the first plant unexpectedly discovered by surprise.
247. *Polystichum centronepalense*, underside, pale brown scales, appears intermediate between *P. sinense* and *P. piceopaleaceum*?
248. *Polystichum centronepalense*, close-up of top-surface, Himalaya to Deurali Lodges, 3000 + m.
249. *P. centronepalense*, close-up of young sori and dense golden scales, beneath.
250. *P. centronepalense*, crown with scaly stipe-bases.
251. Avalanche and altitude-sickness warning notice above Himalaya Lodge. - very relevant to our trip!
252. An attractive *Euphorbia* (Spurge), which would grace any garden of cold climes. Species?
253. *Athyrium rupicola*, Himalaya to Deurali Lodge, 3000 m.
254. *Athyrium rupicola*, tapering frond-base and lobe-toothed pinnules.
255. Stand of *Athyrium rupicola* young fronds.
256. A petite Violet (*Viola*) growing on earth-banks. Species?
257. Sagun at Hinko Cave, Deurali, where the ancient Tibetan flying Tantric, Milarepa, meditated 3000 years ago, but no flying for us, we're still plodding along the path!
258. White *Cornus* species in flower.
259. The path to Deurali Lodge (behind), also the highest spot *Polystichum centronepalense* turned up among the rocks, 3200 m.
260. Chris F.-J. taking a short break near Deurali, with my 30-year-old Karrimor Karibou rucksack still going strong-ish, like its owner.
261. *Lepisorus clathratus*, a small, high-altitude lithophytic species growing among compact moss and rocks, with bluntish, or not very acuminate frond-apices and delicate, slightly succulent frond, Deurali, 3200 m.
262. *Lepisorus clathratus*, growing in on rock-crevices.
263. *Lepisorus clathratus* rhizome-scales - a bunch of the characteristic toothed, translucent, clathrate rhizome-scales are just above the green larger-leaved moss - important to clean moss and earth away from a herbarium specimen in all *Lepisorus*, where scales must be visible for identification. Clathrate means the cell-wall network is clearly visible, unlike in most other *Lepisorus*.
264. *L. clathratus*, plants with a slightly asymmetrical lamina-base and longer sporangial annulus (under the microscope) were renamed as *Platygyria variabilis* by Prof. Ren-Chan Ching, but in error. The type species of *Platygyria*, *P. waltonii* from Tibet and China, is merely aberrant populations of *L. clathratus* with fronds dividing into several "pinnae" and molecular over-interpretation is misleading.
265. Spectacularly carmine-red ground orchid, *Dactylorhiza hatagirea*, the "Panchaule" (five- fingered bulb), seriously threatened and depleted due to massive and still not controlled collection as a reputed aphrodisiac.
266. *Aleuritopteris grisea*, has a wrinkled upper surface, white farina beneath and dark-red, concolorous stipe-base scales and is confined to the high Himalaya, despite fanciful misidentified reports from central India, Bangladesh etc., Deurali 3200 m.
267. The superb *Cypripedium luteum*, yellow Himalayan Ladies' Slipper orchid, Deurali 3200 m.
268. Ice surface on the smaller of two main avalanche-debris ice-slopes to cross, this one just before Deurali Lodge; it melts until replenished by huge Summer avalanches from the high snow-peaks of Hiunchuli Himal a mile up above. Mind the holes and gushing stream beneath!
269. Deurali ice-slope surface - easy crossing in the morning.
270. Delightful *Primula* cliff, Deurali, 3200 m - Species? In the candelabra-flowered group.
271. The welcome haven of Deurali Lodge, with Machapuchare peak up behind it.
272. We are HERE, in case one didn't realise; sign-board map at Deurali.
273. Our party in the cold morning chill by upper Modi khola, setting out from Deurali Lodge, 3 June 2012.
274. CRFJ by rushing Modi khola river, below a steep ice-slope above Deurali.
275. Young fronds of *Deparia subsimilis* (syn. *D. acuta*), with elongated and lobed 1st acroscopic pinnules in the lowest couple of pinnae and many dark scales at the stipe-base, above Deurali.
276. *Deparia subsimilis* stipe-bases, above Deurali.
277. *Deparia subsimilis*, frond base.
278. *Pichisermollodes malacodon*, narrow teeth at margins, rocks above Deurali near ice- slope, 3200 m.
279. *Pichisermollodes malacodon*, above Deurali.
280. *Pichisermollodes malacodon*, close-up showing acute teeth which are sometimes very long-aristate.
281. *Pichisermollodes malacodon*, thinnish rhizome with brown scales, above Deurali.
282. Early morning sunbeams behind part of the summit of Machapuchare peak, above Deurali.