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Endemics and Pseudo-Endemics in Relation to the Distribution Patterns of Indian Pteridophytes

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ABSTRACT: Of *c.* 530 Pteridophytes reported as endemic to the India in recent decades (about half the total number of *c.* 950-1000 known Indian species), the great bulk are mistaken, particularly those from the Indo-Himalaya. Only 47 endemic Indian ferns, less than 10% of those reported previously, are accepted here. But this figure includes several that are rather doubtfully endemic, mainly due to unresolved taxonomic doubt, or because they may be expected to occur in adjacent Countries. Thus 8 are taxonomically dubious, requiring further study, and a further 7, all from N.E. India, may possibly be expected elsewhere outside India. The *c.* 483 mistaken pseudo-endemics arose mainly due to naming of erroneous "new species" thought to be endemic, or due to not knowing the range of species outside political India, combined with insufficient investigative taxonomic research.

In the present paper previous reports of endemics are listed and their status is reappraised along with a new list of accepted endemics. Quite opposite to previous conclusions, the great majority of endemic Indian Pteridophytes are peninsular-Indian to south-Indian ferns (27, plus 5 more taxonomically dubious), with far fewer being N.E. Indian (7, all of which may possibly be expected elsewhere outside India) and W. Himalayan (2, plus 1 taxonomically dubious); the floristically Malesian Nicobar Islands have (3, plus 2 more taxonomically dubious). These numbers are only to be expected as N.E. India is an intimate part of the Sino-Himalayan and S.E. Asian flora, connected without barriers to Tibet and China or to Myanmar by two mountain chains, while S. India is more isolated geographically since more ancient times and has a partly Malesian fern-flora. Some details of Indian endemics in relation to phytogeographical elements are given.

Endemic species: *Huperzia* - 1, *Selaginella* - 9, *Isoetes* - 1, *Osmunda* - 1, *Arthromeris* - 1, *Phymatosorus* - 1, *Oreogrammitis* - 2, *Trichomanes* - 1, *Pteris* - 1, *Cyathea* - 3, *Lindsaea* - 3, *Asplenium* - 3, *Thelypteris* - 3, *Athyrium* - 2, *Tectaria* - 1, *Dryopsis* - 1, *Dryopteris* - 3, *Polystichum* - 4, *Bolbitis* - 3, *Elaphoglossum* - 3.

KEY WORDS: India, Pteridophytes, endemics, phytogeography, pseudo-endemics.

THE LITERATURE OF ENDEMIC FERNS

In the earlier days of Indian subcontinental pteridology, a reasonably high proportion of the description of new species was accurate since the Indian fern-flora was largely unknown and was mainly studied prior to the cataloguing of the intimately connected and adjacent Sino-Himalayan flora. Duplicated redescription of several S.E. Asian ferns was largely sorted out by 19th Century and early 20th Century pteridologists themselves, albeit while overlooking some species that have subsequently turned out not to be identical between the two floristic regions, as initially thought. The fewer Sino-Japanese species that extend into the Indo-Himalaya have largely been accurately understood in recent times mainly due to the careful modern work of the Japanese pteridologists.

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However since Indian Independence in 1947, work on Pteridophytes in India began of necessity to take a more local approach, with less reference to the big European herbaria far away at Kew, the BM, Berlin, Paris, Leiden, Geneva *etc*. Although Calcutta initially had good sets of collections and isotypes, a considerable proportion of the older collections fell into disrepair due to insect-damage, dampness, loss of labels and neglect and thus became unavailable for comparative study. Accurate typification, knowledge of the records made previously, and particularly comparison with the Pteridophyte-flora of adjacent areas became a progressively weaker and more overlooked aspect of Indian pteridological study. Indian workers also came under pressure to publish too frequently and include novelties in their work which had not been researched fully enough and on a wide enough scale and were thus largely erroneous. Many workers still ignore the collections held in Indian herbaria as well as those from abroad and

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publish local floristic catalogues based only on their own collections and often with dubious identifications.

Initially largely unknown to Indian pteridologists, detailed work had also been carried out in the adjacent, floristically continuous region, China, with the complexity and richness of the Chinese fern-flora becoming well known. The work in China happened in two main phases, first through the careful and accurate work of the remarkably accomplished Father of Chinese Pteridology, Dr. Hermann Christ (1833-1933), of Basel, whose herbarium is mainly in Paris Museum, along with Dr. Carl Christensen (1872-1942), of Copenhagen, whose herbarium, including important kleptotypes, is in the BM. Secondly the Chinese ferns became further known, yet simultaneously considerably obscured, through the less accurate explosion of mistaken and often random "new species" and genera, alongside genuine ones, resulting from the work of Prof. R.C. Ching (1898-1986) of Beijing, whose types, again including important kleptotypes, are mainly in K, BM, PE and KUN. Although Ching named many good taxa and understood the relationships between many confusing genera, he misapplied many older Indian names and described far too many supposed species which merely represented insignificant minor variation within species, which he did not investigate in the field. He also split numerous small groups of species into new genera which have not been generally accepted. In his later years, from the 1950s onwards he mistakenly named virtually any specimens sent to him as if new species. This inevitably began to affect Indian workers, particularly the active Panjab University school of cytologists, who at first, in the absence of detailed taxonomic research of their own, were sending their voucher-specimens out to various international specialists for identification, including to Prof. Ching. Thus Ching's names occasionally began to appear in India as the recipients would invariably accept them as true and add them to the Indian list, without further taxonomic study. A number of species were said by Ching to be new ones endemic to India, which were actually common to both India and China and usually not new at all.

Unfortunately far too prevalent an attitude began to develop in India that botanical taxonomic publication is largely about naming new species whenever a specimen cannot be recognised and identified, particularly if precociously fertile. Many papers merely consist of an author, with little or no knowledge of the genus concerned in Asia, stating that he had come across a single specimen which could not be matched and which was therefore described as a new and endemic species. Such papers are largely published without any proper comparative discussion as to why the specimen is something new and how it is significantly different from its nearest relatives and without any study or understanding of the range of variation in it and in related species. These often include incomplete, immature, atypical or even sterile material. However it is a much more difficult task, requiring detailed and wide experience, knowledge and investigative study, to recognise and sink a mistaken "new species" than it is to merely describe and name one. But it is clear that the onus should lie with the author of the new species to provide clear evidence (in comparison with its correct nearest relatives) that it is new, rather than just giving largely irrelevant, hardly diagnostic descriptions of what is effectively an unidentified type-specimen. The problem of misunderstanding of endemic species is intimately bound up with that of excessive naming of erroneous new species from a local area. Endemics, or pseudo-endemics have therefore been widely over-reported at the point of first description of taxa. Most of these reports have been reassessed by Fraser-Jenkins (1997) and nearly all have been studied and their type-specimens examined by the present author since that time. Results of these studies have also been incorporated here where relevant.

The taxonomic problem is compounded by a certain degree of self-isolation by authors, who do not study the species and literature beyond the political borders of India and thus suffer from a lack of knowledge of their real range as well as which species they actually belong to. There has also been an almost unique reluctance nationally to assimilate the work of others and enter into proper correspondence, often, it appears, to protect the species authors published despite knowing that they had insufficient knowledge of the genus to be able to raise them as new species. This is combined with a debilitating lack of wide-based expertise leading to journals' failure to edit and revise papers sent for publication. Many publications thus repetitively endorse the same old mistakes that have often been definitively revised already, unknown to the author concerned, who has not troubled to gain access to the relevant literature and see the relevant voucher-specimens in other herbaria.

Others simply publish novelties whenever specimens they have collected are unfamiliar to them. In two recent examples, Ghosh et al. (2004) and Singh and Panigrahi (2005) have named nearly 60 "new species" between them from the N.E. of India,

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the latter naming nearly 50 novelties, frequently after themselves, from one small district (Chamlang District of Arunachal Pradesh) adjacent to Myanmar, despite serious concern expressed to them by their supervisor, the late Prof. K.U. Kramer, and by the present author, who reidentified some of their supposed new taxa for them (see Fraser-Jenkins, 1997). They also recognised many other spurious names, all of whose types the present author has studied as well as visiting the area in detail. But out of all their new taxa, only a single species of *Diplazium* may stand, and that only due to the failure of its previous 19th Century nomenclature (at varietal rank only), which they were unaware of, so constituting a case of nomenclature by chance error. Singh and Panigrahi referred to 46 of their mistaken novelties as "neo-endemics", misunderstanding the meaning of the term, but not a single one of their species is genuinely endemic to either Arunachal Pradesh or India. Thus Panigrahi's question, "What, then, can explain such a high rate of speciation within such a limited area as Tirap District?", can readily be answered by what should have been understood following the clear advice given to him by Kramer and the present author: it is entirely due to misguided New Species Syndrome (Fraser-Jenkins, 1997).

In addition several Indian pteridologists published compilation-studies of Indian endemics drawing on the previous reports, but further compounding the problem due to not carrying out taxonomic investigation of the reports cited and not themselves being aware of the range of species within or beyond the geographical borders of India, particularly into Tibet, China, Myanmar (Burma) and, concerning South India, into Sumatra and the rest of the Malesian region. Chandra and co-workers (1981-2001), first worked on the subject of Indian endemics, but inadvertently invented a large number of erroneous endemics in their otherwise pioneering publications, setting the scene for later workers to proceed further down the evidently enticing path of pseudo-endemism. The number was substantially increased with each author's publication, not rarely including adventive species or those actually described from China *etc*. as if endemic. Chandra's first couple of lists were largely followed by Bir (1987), who rearranged them by geographical regions within India and thereby brought to prominence the spurious idea that most endemics were in the N.E. of India, based mainly on Chandra's interpretation of which species were endemic taxa. Bir (1989) made the telling comment that "such a high percentage of endemism is not seen in any geographical region of the world", to which we must add that this also includes India, since he did not realise that something must have been wrong with the figures he gave. He also reversed the phytogeographical situation by stating that "Fern endemism is far less in south India. Pulnis and Nilgiris account for only 8% of the total". But in fact the 32 S. and S.C. Indian endemics recognised here account for 68% of the total number of Indian endemics, and would account for no less than 86% of Indian endemics if all dubious endemics were disallowed.

A largely erroneous account and list of "Himalayan" endemics was also made by Dhir and Saiki (1984) without being aware of Chandra's work, but fortunately the authors concerned were unable to identify many species to add to the list of pseudo-endemics and effectively had no knowledge of Chinese species confined to the Himalaya. Further, largely erroneous publications concerning endemics were the more extensive lists of Dixit & Bal Krishna (1989, 1990), which, apart from drawing most of their data from Chandra or Bir, and misplacing several species in the wrong region, also added the many additional erroneous new taxa described by the late Dr. Dixit himself, subsequently synonymised by Fraser-Jenkins (1997). Apart from accepting some 200 taxa as "endemics", upon which they erroneously based an analysis and argument for conservation strategies, they also followed Bir and drew virtually the opposite phytogeographical conclusions to the real situation. Bir had concluded that N.E. India is the richest in endemics, with what many workers persistently call the N.W. Himalaya, *i.e.* the W. Himalaya, a little further down the scale and the Ghats (W., E. and southernmost hills) of S. India placed subsequently. The fact that the N.E. Himalaya may actually be the region with the lowest endemism, with few and all rather dubious endemics, is only to be expected once the widely held conceptual limitations of some geo-political Great Wall around the border of India are removed from the equation. The N.E. frontier-region is the most intimate part of the Sino-Himalayan and S.E. Asian flora, directly connected without barriers to Tibet, China and Myanmar, whose adjacent and connected fern-floras apparently remain an almost complete unknown to many authors in India. N.E. India's main link into China is via the eastern end of the Great Himalayan Range itself, which runs east-to-west out of China and S.E. Tibet into India, allowing westward migration along its flanks. The migration-link to S.E. Asia is via the south-to-north running Chin Hills-Khasi-Manipur range from the Arakan and Shan regions of Myanmar and thus from N. Thailand *etc*.

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Despite the many studies of Indian endemic Pteridophytes on a national or local scale which have been published in the last 30 years and the numerous publications that have described new taxa said to be endemic, true figures of endemics have never been understood. Only 47 accepted endemics are listed below, but including 8 taxonomically dubious ones which may or may not be correct and a further 7 which may probably be expected to occur in adjacent countries. A larger list of no less than 529 so-called endemic Pteridophytes reported in Indian literature over the last 30 years has been drawn up with comments explaining its reappraisal. An astonishing 490 taxa from this list are erroneous "pseudo-endemics", either already known from other countries, or not being genuinely distinct species. Thus for the first time it has become possible to understand the floristic groupings and distribution-patterns of endemic species accurately, after removing the erroneous taxonomic and distributional data that have long plagued the Indian literature.

ENDEMICS AND PHYTOGEOGRAPHICAL ELEMENTS

Most studies of Indian endemic Pteridophytes have confined their attention to within the borders of political India. But a more meaningful view of the compilation and distinctness of the various floristic elements present in different regions of India can be obtained by considering species endemic to the various phytogeographical zones which occur in or reach India, but often extend from adjacent areas. Groups of floristic elements readily identifiable in Indian Pteridophytes are:

1. European elements

This group of species, mainly found in the W. and far W. Indo-Himalaya (see Fraser-Jenkins, 1992, 1993), contains no endemic pteridophytes and is mainly related to the Mediterranean flora, but also contains species from some other European zones. Some of the species may reach parts of the further east Indo-Himalaya, apparently through China, but can be absent in the central Indo-Himalaya. This may either be due to reaching the E. Himalaya independently of those extending east from Europe to the W. Himalaya, or in other cases may be understood as part of the same European intrusion having been obliterated in the central Indo-Himalaya and Tibet.

2. Sino-Himalayan elements

This is the largest group of species in the Indo-Himalaya, which have migrated westwards along the Indo-Himalayan line from a centre of diversity in S.W. China, N. Myanmar and far N.E. India (and eastwards to Taiwan and in some cases Japan). It contains various subgroups (see Fraser-Jenkins, 1984), two of which contain endemic species or subspecies.

A. West Indo-Himalayan subgroup and endemics. Occurring from Afganistan, through Pakistan to the W. Indo-Himalaya and W. Nepal. This includes the Afghano-W. Himalayan endemics, some reaching the former Soviet Central Asia; one case reaches the Caucasus, but is included here. Several of them are closely related to E. Indo-Himalayan and Chinese species from drier areas, as vicariant species or subspecies and in a few cases very scattered transitional populations occur in N.W. to N.C. Nepal behind the Himalaya. There are approximately 17 species endemic to the W. Himalaya (but 6 of them are doubtfully so), whereas only 3 or 4 of these species are endemic to India.

B. East Indo-Himalayan subgroup and endemics. Occurring from Sikkim, Bhutan and N. Arunachal Pradesh to Tibet and Yunnan-Szechuan, China. A considerable number of these Sino-Himalayan species occur in Taiwan, often with stepping-stone links across the mountain ranges of S. China. This is a large element that has often been mislabelled and confused with Sino-Japanese elements (from E. China, Korea and Japan *etc*.) including in the Japanese East Himalayan reports. The endemics belonging to this element constitute a much larger group as it includes the large number endemic to S.E. Tibet/S.W. China/N. Myanmar, which may or may not reach India. It also includes a subgroup of high-altitude, Tibetan-type elements. Although the endemics of this group have not yet been accurately counted there are perhaps *c*. 300 or more species in this category, most being endemic to this region, of which only 1 (*Arthromeris notholaenoides* V.K.Rawat & Fras.-Jenk.) is endemic to India, as so far known, but may probably be expected to occur in S.E. Tibet and/or S.W. China as well.

3. **S. E. Asian elements**

This element, which is the second largest component of the Indo-Himalayan Pteridophyte flora, contains a number of different patterns of species extending up to India from parts of S.E. Asia. Most are common in the E. Indo-Himalaya and a considerable number of these species pass westwards along the lower hills and outer ranges of the

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Indo-Himalaya to the eastern parts of the W. Himalaya or further. Others are an important and often ancient component of the S. Indian flora and may have been dispersed westwards across the Indian ocean directly from Malesia, while some appear to have migrated southwards from N.E. India via the peninsular mountain-ranges.

A. Manipur-Khasi-Myanmar subgroup and endemics. Occurring from the eastern border regions of N.E. India to S. Yunnan and N.W. Myanmar, in the lower ranges and foothills, often with connections to Southern Myanmar and N. Thailand. The species of this subgroup may be seen as having migrated up the ranges from Myanmar to N.E. India (erstwhile Assam), but have not penetrated further west along the Himalaya. Their numbers have not yet been accurately estimated but probably come to about 150 species which are endemic to this region. There are very few Indian endemics (5) from this element as so far known, but all of these may probably be expected outside India in Myanmar and S.W. China.

B. Andaman and Nicobar subgroup and endemics. The flora of these islands is only related to India by virtue of the common origin of the S.E. Asian stream of species coming up to India from Malesia and also to the Andamans and Nicobars. They must be considered as part of the Malesian region despite their political connection to India. There are as many as 5 endemics, due to their spatial isolation, but two of these are taxonomically dubious and others are related to Malesian species.

C. Hindu-Lankan subgroup and endemics. This is a special group of S. and peninsular Indian and/or Sri Lankan species. The pteridophytes of this region have their main phytogeographical connections with three regions, firstly from N.E. India, particularly with the S.E. Asian elements of that region, but also to a lesser extent with some of the Sino-Himalayan elements; secondly a strong connection directly with the Malesian flora of S.E. Asia across the Indian Ocean; and thirdly a tropical African connection, placed here for convenience, with connections to Madagascar, the Mascarenes, the Seychelles and E. Africa. Due to the considerable isolation of this area for a long time it has a larger number of endemics, but many of them appear to be related to species from one of the three main origins. It contains *c.* 150 endemics (but 26 of them doubtful), and of them some 32 are Indian endemics, being easily the largest group of endemic Pteridophytes in India.

4. Afro-Arabian elements

This is a very small but interesting group of species occurring in W.C. India, with connections to the drier regions of N.E. Africa and S. Arabia. There are less than half a dozen species, and no endemics. The recent discovery of the hitherto overlooked species, *Negripteris scioana* (Chiov.) Pic.Serm. in Rajasthan by Dr. Chaman Singh Dulawat of Udaipur is of particular interest (Fraser-Jenkins and Dulawat, 2008, in press). It should also be understood that a number of S. Indian and Sri Lankan species, included for convenience in the Hindu-Lankan subgroup above, are actually African elements of a more southerly subgroup in India.

ACCEPTED INDIAN ENDEMICS AND POSSIBLE ENDEMICS

Possible endemics are listed with a query.

Huperzia

1. *Huperzia nilagirica* (Spring.) R. D. Dixit (syn.: *H. hilliana* (Nessel) Holub) (Dixit and Bal Krishna, 1989, *sub* "*niligarica*"; Dixit and Bal Krishna, 1990; Chandra, 1998, *sub* "*nilgirica*") - endemic to S. India.

Selaginella

2. *Selaginella adunca* A.Braun *ex* Hieron. (Dixit and Bal Krishna, 1989, 1990) subsp. *adunca* - endemic to N.W. India; not [yet] recorded from W. Nepal. The closely similar *Selaginella adunca* A.Br. *ex* Hieron. subsp. *albocincta* (Ching) Fras.-Jenk., replaces it in Tibet and S.W. China. The two subspecies only differ in the minor characteristic of the width of the scarious leaf-margin.
3. *Selaginella cataractarum* Alston (Dixit and Bal Krishna, 1989, 1990; Chandra, 1998; all *sub* "*cataractum*") - endemic to S. India.
4. ?*Selaginella ganguliana* R.D.Dixit (Dixit and Bal Krishna, 1989, 1990; Chandra, 1998, *sub* "*ganguleana*") - unidentified, dubious taxon, requires comparison with other Indian and S.E. Asian species, perhaps endemic to S. India.
5. ?*Selaginella keralensis* R.D.Dixit (Dixit and Bal Krishna, 1990; Chandra, 1998) - unidentified, dubious taxon, requires comparison with other Indian and S.E. Asian species; perhaps endemic to S. India.
6. *Selaginella miniatospora* (Dalz.) Baker (Dixit and Bal Krishna, 1989, 1990; Chandra 1998) - endemic to S. and S.W. India. Closely similar to the lower-altitude C. Nepalese to Arunachal Pradesh to Chinese species, *S. tenuifolia* Spring.
7. ?*Selaginella nayarii* R.D.Dixit (Dixit and Bal Krishna, 1990; Chandra, 1998) - unidentified, dubious taxon, requires comparison with other

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Indian and S.E. Asian species; perhaps endemic to S. India.

8. *Selaginella pentagona* Spring (Dixit and Bal Krishna, 1989, 1990; Chandra, 1998; Ghosh et al., 2004; Singh and Panigrahi, 2005) - as currently known it is endemic to N.E. India, though it is likely to occur in Myanmar and perhaps in S.W. China. Not present in peninsular India as stated by Chandra.
9. *Selaginella radicata* (Hook. & Grev.) Spring (Kaur and Chandra, 1994; Chandra, 1998) - endemic to S. India.
10. *Selaginella tenera* (Hook & Grev.) Spring (Manickam and Irudayaraj, 1992; Kaur and Chandra, 1994; Chandra, 1998) - endemic to S. India.

Isoetes

11. Currently not assessable due to taxonomic problems concerning definition of species and excess naming of spore-variants as species. But it appears that there is probably a second species present in India in addition to the non-endemic *I. coromandelina* L.f., both of which are currently known under several different names. Further study and typification of both this and a number of later names is required. The probable second species, whose correct name is as yet unclear, might be endemic to S. and C. India.

Osmunda

12. *Osmunda huegeliana* C.Presl (reported under its synonym, *Osmunda regalis* L. var. *panigrahiana* R.D.Dixit by Kaur and Chandra, 1994; Chandra, 1998, 2001 (with erroneous locality of Kameng, Arunachal Pradesh)) - endemic to S. and C. India.

Arthromeris

13. *Arthromeris notholaenoides* V.K. Rawat & Fras.-Jenk. (in Fraser-Jenkins, 2008, in press) - endemic to N.E. India so far as is currently known, but may also be expected to occur in Tibet; S.W. China or N. Myanmar. A very distinct, densely hairy species with many small, blunt-apexed segments, known so far only from Rawat's single collection from N. Arunachal Pradesh (Debang Valley District, Mehao Lake).

Phymatosorus

14. ?*Phymatosorus beddomei* S.R. Ghosh (Dixit and Bal Krishna, 1989, *sub* "*Phymatisorus*"; Chandra 1998, 2001) - probable synonym of *Phymatosorus cuspidatus* (D. Don) Pic. Serm., which is not endemic. The S. Indian plants have slightly more adnate pinnae, with the adnation extending further down in the upper part of the frond, but often match the Himalayan ones. They might perhaps be more-or-less separable as a geographical subspecies, which is endemic to S. India, but further study of the morphological overlap in a series of fronds is required.

Oreogrammitis

15. *Oreogrammitis pilifera* (Ravi & J. Joseph) Parris - endemic to S. India, where the Sri Lankan endemic, *O. medialis* (Baker) Parris, does not occur. Reports of *O. medialis* from S. India are in error for *O. pilifera*, which varies in the number of bristles present on the sporangia and was thus named on an erroneous basis, which by chance-taxonomy provided the correct name for the species.
16. *Oreogrammitis austroindica* (Parris) Parris - endemic to S. India (Nilgiri Hills); very rare or potentially extinct. Known only from a single collection by Beddome, which was first noticed as distinct by Sledge (1960).

Trichomanes

17. ?*Trichomanes agasthianum* (Madhus. & C.A. Hameed) C.A. Hameed, K.P. Rajesh & Madhus. (2003) (syn.: *Crepidomanes agasthianum* Madhus. & C.A.Hameed; *Trichomanes lunulatum* (Madhus. & C.A. Hameed) C.A. Hameed, K.P. Rajesh & Madhus. (2003)) (Chandra, 2001, *sub Crepidomanes lunulatum* Madhus. & C.A.Hameed) - unidentified species, requires comparison with S.E. Asian species; may otherwise be endemic to S. India.

Pteris

18. *Pteris perrottetii* Hieron. (Chandra, 2000) - endemic to S. India, though its relationship to *P. praetermissa* T.G.Walker, from Sri Lanka and S. India, requires further study.

Cyathea

19. *Cyathea albosetacea* (Bedd.) Copel. (Chandra, 1982; Bir, 1987; Dixit and Bal Krishna, 1990; Chandra, 1998) - endemic to the Nicobar islands.
20. ?*Cyathea nicobarica* N.P. Balakr. & R.D. Dixit (Dixit and Bal Krishna, 1989, 1990; Chandra, 1998, 2001) - effectively unidentified species, requires proper comparison with Malesian species; perhaps endemic to the Nicobar Islands, if distinct.
21. *Cyathea nilgirensis* Holttum (Chandra, 1982; Bir, 1987; Dixit and Bal Krishna, 1990; Manickam and Irudayaraj, 1992; Chandra, 1998) - endemic to S. India.

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Lindsaea

22. *Lindsaea malabarica* (Bedd.) Baker (Chandra, 1982; Dixit and Bal Krishna, 1990; Chandra, 1998) - endemic to S. and S.C. India.
23. *Lindsaea tenera* Dryand. (Chandra, 1982, 1998) - endemic to the Nicobar islands.
24. ?*Lindsaea andamanica* R.D. Dixit & S.R. Ghosh - possibly endemic to the Andaman Islands. However Kramer (1972) thought, probably rightly, that it merely represented a small form of the variable species *Lindsaea obtusa* J. Sm. *ex* Hook., which is not endemic.

Asplenium

25. *Asplenium exiguum* Bedd. (reported in present paper, omitted by Dixit, 1984 and Manickam and Irudayaraj, 1992) - endemic to S. India. Viane's suggestion (in Viane and Reichstein, 2004), among other unsubstantiated comments, that it may be the same as the Himalayan species, *A. yunnanense* Franch, was in contrast to the present author's finding for the late Prof. T. Reichstein, on collecting it in its type-locality in the Nilgiri Hills, S. India, that they are distinct. It is not accepted here, pending further investigation.
26. *Asplenium khasianum* Sledge (Dixit and Bal Krishna, 1989, 1990; Chandra, 1998; Singh and Panigrahi, 2005) - apparently endemic to N.E. India, though likely to turn up in Myanmar, and probably under a different name, in S.W. China.
27. *Asplenium rivulare* Fras.-Jenk. (in Chandra, Fraser-Jenkins, Kumari and Srivastava, 2008) (syn.: *Asplenium unilaterale* Lam. var. *rivale* Bedd.; *Asplenium rivale* (Bedd.) Bir, *non* Spruce; *Asplenium hindusthanense* ["*hindusthanensis*"] Bir, *nom. inval*., replaced name reference not cited) (Chandra, 1982; Bir, 1987; Dixit and Bal Krishna, 1990, *sub* "var. *rinale*"; Chandra, 1998) - probably endemic to S. India, but requires comparison with S.E. Asian and Chinese material of the aggregate. Fraser-Jenkins (1997) misplaced it within the similar, but thinner-textured *Asplenium filipes* Copel. (syn.: *A. unilaterale* var. *udum* Atk. *ex* Bedd. and var. *delicatulum* Parish *ex* Bedd.; *A. obliquissimum* (Hayata) Sugim. & Sa. Kurata).

Thelypteris

28. *Thelypteris* (*Sphaerostephanos*) *kurzii* (Holttum) Fras.-Jenk. (1997) (syn.: *Sphaerostephanos kurzii* Holttum (Chandra, 1982; Dixit and Bal Krishna, 1990; Chandra, 1998) - endemic to the Nicobar Islands. Misreported by Dixit (1984) from S. India and the Mascarene arhipelago.
29. *Thelypteris* (*Parathelypteris*) *didymochlaenoides* (C.B. Clarke) Ching (syn.: *Coryphopteris didymochlaenoides* (C.B. Clarke) Holttum *ex* B.K. Nayar & S. Kaur) (Chandra, 1982, as "doubtfully endemic"; Dhir and Saiki, 1984; Dixit and Bal Krishna, 1989, 1990; Chandra, 1998) - apparently endemic to N.E. India, though perhaps likely to be found in S.W. China and Myanmar. Placed by Nayar and Kaur (1974) in *Coryphopteris*, which was listed by Grimes and Parris (1986), though it was placed in *Parathelypteris* in the folders at Kew by Holttum, who did not include it in his monograph of *Coryphopteris* (Holttum 1976b).
30. *Thelypteris* (*Christella*) *namburensis* (Bedd.) C.F.Reed (syn.: *Christella namburensis* (Bedd.) Holttum) - apparently endemic to N.E. India. Probably to be expected from Myanmar and also China, perhaps under some other name. Holttum reported it from Thailand, though it was not listed from there subsequently by Tagawa and Iwatsuki (1988).

Athyrium

31. ?*Athyrium kumaonicum* Punetha (Kaur and Chandra, 1994) - currently considered as a possible endemic to the W. Himalaya, though further study required into both the identity of the type and whether it occurs further east and into China.
32. *Athyrium parasnathense* (C.B. Clarke) Ching *ex* Bir (Chandra, 1982; Dixit and Bal Krishna, 1990; Chandra, 1998) - endemic to S. and C. India.

Tectaria

33. *Tectaria subconfluens* (Bedd.) Ching (Chandra, 1982, 1998) - apparently endemic to N.E. India, but may possibly also be expected in S.W. China and/or Myanmar.

Dryopsis

34. *Dryopsis scabrosa* (Kunze) Holttum & P.J. Edwards (syn.: *Ctenitis scabrosa* (Kunze) Ching) (Chandra, 1982, as "doubtfully endemic"; Manickam and Irudayaraj, 1992; Chandra, 1998) - endemic to S. India.

Dryopteris

35. *Dryopteris austroindica* Fras.-Jenk. (Fraser-Jenkins, 1989) - endemic to S. India.
36. *Dryopteris khullarii* Fras-Jenk. (Fraser-Jenkins, 1989) - endemic to the W. Himalaya. A presumed neoendemic of local hybrid-origin.

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37. *Dryopteris odontoloma* (Bedd.) C. Chr. (Fraser-Jenkins, 1989, and reported in the present paper; omitted by Manickam and Irudayaraj, 1992) - endemic to S. India.

Polystichum

38. *Polystichum manickamii* Benniamin, Fras.-Jenk. & Irud. (2008, in press) (reported in the present paper) - endemic to S. India.
39. *Polystichum palniense* Fras.-Jenk. (2008, in press) - endemic to S. India; related to but distinct from *P. moluccense* (Blume) T.Moore, from S.E. Asia.
40. *Polystichum polyodon* Wall. *ex* Ching - endemic to N.E. India, as known so far, though it may possibly be expected in Myanmar and/or S.W. China.
41. *Polystichum subinerme* (Kunze) Fras.-Jenk. (syn.: *Polystichum kunthianum* B.K. Nayar & Geev. [*non sensu* Fraser-Jenkins (1991) = *P. palniense* Fras.-Jenk.]) (Manickam and Irudayaraj, 1992) - endemic to S. India.

Bolbitis

42. *Bolbitis presliana* (Fée) Ching (Chandra, 1982, 1998) - endemic to S. India.
43. *Bolbitis semicordata* (Baker) Ching (Chandra, 1982, 1998) - endemic to S. India.
44. *Bolbitis subcrenatoides* Fras.-Jenk. (2008, in press) (syn.: *Acrostichum proliferum* Hook., *non* Blume; *Bolbitis subcrenata* (Hook. & Grev.) Ching var. *prolifera* (Hook.) Hennipman) (Chandra, 1982; Bir, 1987; Dixit and Bal Krishna, 1990; Chandra 1998) - endemic to S. India.

Elaphoglossum

45. *Elaphoglossum beddomei* Sledge (Chandra, 1982; Dixit and Bal Krishna, 1990; Manickam and Irudayaraj, 1992; Chandra, 1998) - endemic to S. India.
46. *Elaphoglossum nilgiricum* Krajina *ex* Sledge (Chandra, 1982; Dixit and Bal Krishna, 1990; Manickam and Irudayaraj, 1992; Chandra, 1998) - endemic to S. India.
47. *Elaphoglossum stigmatolepis* (Fée) T.Moore (Chandra, 1982, as "doubtfully endemic"; Dixit and Bal Krishna, 1990; Manickam and Irudayaraj, 1992; Chandra, 1998) - endemic to S. India.

LIST OF TAXA REPORTED AS ENDEMIC BY INDIAN AUTHORS

The following publications reported numbers of endemics as follows:

Chandra (1982) - 96; Chandra and Kaur (1984) - 137; Dhir and Saiki (1984) - 58 endemic to the whole Himalaya, of which 12 endemic to India (but Tibetan and Chinese species not present in India omitted); Dixit (1984) - 214 listed as having an endemic range only; Bir (1987) - 85; Bir (1988) - *c.* 134; Bir (1989) *c.* 128+; Dixit and Bal Krishna (1989) - 110 additional; Dixit and Bal Krishna (1990) - 210; Manickam and Irudayaraj (1992) - 16 (S. India only); Nayar and Geevarghese (1988, 1993) - 17 new endemics, inc. Nayar's new taxa; Kaur and Chandra (1994) - 40 additional; Chandra (1998) - 234 (25 removed from previous papers, 14 more added); Chandra (2000) - ?20 additional; Chandra (2001) - 14 additional; Pande and Pande (2003) - 30 + 10 in appendix (from Kumaon, inc. 9 erroneous new taxa); Ghosh et al. (2004) - 95 listed as having an endemic range only; Singh and Panigrahi (2005) - 16 (endemic to N.E. India) plus 44 listed as having an endemic range only and called "neoendemics"; Hameed, Rajesh and Madhusoodanan (2003) - 5 apparently new endemic Hymenophyllaceae, of which one accepted here, pending further study.

Huperzia

1. *Huperzia dixitiana* P. Mandal & S.R. Ghosh - synonym of *H. selago* (L.) Bernh. *ex* Schrank & M.Martens subsp. *arctica* (Grossh. *ex* Tolm.) Å. Löve & D. Löve (see Fraser-Jenkins, 2008, in press); not endemic.
2. *Huperzia hilliana* (Nessel) Holub - synonym of *H. nilagirica* (Spring) R.D. Dixit; endemic (S. India).
3. *Huperzia indica* S.R. Ghosh - synonym of *H. herteriana* (Kümmerle) T. Sen & U. Sen; not endemic.
4. *Huperzia nilagirica* (Spring.) R.D. Dixit - endemic (S. India).
5. *Huperzia petiolata* (C.B.Clarke) R.D. Dixit - not endemic.
6. *Phlegmariurus subulifolia* (Wall. *ex* Hook. & Grev.) S.R. Ghosh - synonym of *H. subulifolia* (Wall. *ex* Hook. & Grev.) Trevis., both probably being synonyms of *H. pulcherrima* (Wall. *ex* Hook. & Grev.) Pic.Serm.; neither is endemic.

Lycopodiella

7. *Palhinhaea cernua* (L.) Franco & Vasc. var. *sikkimensis* (O.F.Müll.) Ching - synonym of *Lycopodiella cernua* (L.) Pic.Serm.; neither is endemic.

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Selaginella

8. *Selaginella adunca* A.Braun *ex* Hieron. subsp. *adunca* - endemic.
9. *Selaginella aureola* Spring - synonym of *S. subdiaphana* (Wall. *ex* Hook. & Grev.) Spring; not endemic.
10. *Selaginella blatteri* Bole & M.R.Almeida - synonym of *S. miniatospora* (Dalz.) Baker; endemic.
11. *Selaginella bryopteris* (L.) Baker - not endemic.
12. *Selaginella cataractarum* Alston - endemic (S. India).
13. *Selaginella chrysocaulos* (Hook. & Grev.) Spring - not endemic.
14. *Selaginella coonooriana* R.D. Dixit - synonym of *S. reticulata* (Hook. & Grev.) Spring; not endemic.
15. *Selaginella ganguliana* R.D. Dixit - unidentified, dubious taxon; perhaps endemic (S. India).
16. *Selaginella indica* (Milde) R.Tryon - synonym of *S. longipila* Hieron.; not endemic. Tryon (1955) contended that Hieronymus' type at B actually belongs to *S. densa* Rydb., from Mexico, but this application of the name is not accepted here.
17. *Selaginella jainii* R.D. Dixit - synonym of *S. reticulata* (Hook. & Grev.) Spring; not endemic.
18. *Selaginella keralensis* R.D.Dixit - unidentified, dubious taxon; perhaps endemic (S. India).
19. *Selaginella miniatospora* (Dalz.) Baker - probably endemic (S. and S.W. India), close to *S. tenuifolia* Spring.
20. *Selaginella nairii* R.D. Dixit - synonym of *S. reticulata* (Hook. & Grev.) Spring; not endemic.
21. *Selaginella namdaphaensis* Sarn.Singh & Panigrahi - synonym of *S. subdiaphana* (Wall. *ex* Hook. & Grev.) Spring; not endemic.
22. *Selaginella nayarii* R.D. Dixit - unidentified, dubious taxon; perhaps endemic (S. India).
23. *Selaginella pallidissima* Spring - not endemic.
24. *Selaginella panchganiana* R.D. Dixit - ?synonym of *S. proniflora* (Lam.) Baker; not endemic.
25. *Selaginella panigrahii* R.D.Dixit - synonym of *S. ciliaris* (Retz.) Spring; not endemic.
26. *Selaginella pentagona* Spring - as currently known it is endemic (N.E. India), though it is likely to occur in Myanmar and perhaps under another name in S.W. China.
27. *Selaginella picta* A. Braun f. *viridis* Alston - synonym of *S. picta* A. Braun. A colour-form of no taxonomic significance; neither entity is endemic.
28. *Selaginella radicata* (Hook. & Grev.) Spring - endemic (S. India). Manickam and Irudayaraj's (1992) "species a" is *S. radicata*.
29. *Selaginella rajasthanensis* Gena, Bhardwaja & A.K. Yadav - synonym of *S. reticulata* (Hook. & Grev.) Spring; not endemic.
30. *Selaginella subdiaphana* (Wall. *ex* Hook. & Grev.) Spring - not endemic.
31. *Selaginella tenera* (Hook & Grev.) Spring - endemic (S. India).
32. Manickam & Irudayaraj's (1992) "species b", is slightly near *S. reticulata* (Hook. & Grev.) Spring, which is not endemic. It requires further study and assessment.

Isoetes

33. *Isoetes bilaspurensis* Panigrahi - synonym of *I. coromandelina* L.f.; not endemic.
34. *Isoetes coromandelina* L.f. subsp. *coromandelina* - not endemic.
35. *Isoetes coromandelina* L.f. subsp. *brachyglossa* (A.Braun) Panigrahi (syn.: *I. brachyglossa* A.Braun) - synonym of *I. coromandelina* L.f.; not endemic.
36. *Isoetes coromandelina* L.f. var. *raipurensis* Unni - unidentified dubious taxon; probably not endemic (C. India).
37. *Isoetes debii* S.C. Sinha (1992) - unidentified, dubious taxon; doubtfully endemic (N.E. India).
38. *Isoetes divyadarshanii* P.K. Shukla et al. - unidentified, dubious taxon; doubtfully endemic (S.C. India).
39. *Isoetes dixitii* ["*dixitei*"] Shende - synonym of *I. coromandelina* L.f.; not endemic.
40. *Isoetes fuchsii* Goswami & U.S. Sharma - unidentified, dubious taxon; doubtfully endemic (C. India).
41. *Isoetes indica* D.D.Pant & G.K.Srivast., *non* Koenig (syn.: *I. mirzapurensis* Panigrahi & R.D.Dixit; *I. unilocularis* D.D. Pant & G.K. Srivast.) - unidentified, dubious taxon; doubtfully endemic (S. and C. India).
42. *Isoetes indica* D.D. Pant & G.K. Srivast., *non* Koenig, var. *harotiensis* Bhardwaja & Gena - unidentified, dubious taxon; doubtfully endemic (W.C. India).
43. *Isoetes mahadevensis* G.K. Srivast., D.D. Pant & P.K. Shukla - unidentified, dubious taxon; doubtfully endemic (C. India).
44. *Isoetes mirzapurensis* Panigrahi & R.D. Dixit - synonym of *I. indica* D.D. Pant & G.K. Srivast. (see Dixit 1984); unidentified, dubious taxon; doubtfully endemic (C. India).
45. *Isoetes muricata* Bhu & Goswami - unidentified, dubious taxon; doubtfully endemic (C. India).
46. *Isoetes panchananii* D.D. Pant & G.K. Srivast. var. *panchananii* - unidentified, dubious taxon; doubtfully endemic (C. India).

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47. *Isoetes panchananii* D.D. Pant & G.K. Srivast. var. *pachmarhiensis* G.K. Srivast., M. Srivast., D.D. Pant & P.K. Shukla - unidentified, dubious taxon; doubtfully endemic (C. India).
48. *Isoetes panchganiensis* G.K. Srivast., D.D. Pant & P.K. Shukla var. *panchganiensis* - unidentified, dubious taxon; doubtfully endemic (C. India).
49. *Isoetes panchganiensis* G.K. Srivast., D.D. Pant & P.K. Shukla var. *kermangundiensis* G.K. Srivast., D.D. Pant & P.K. Shukla - unidentified, dubious taxon; doubtfully endemic (C. India).
50. *Isoetes pantii* Goswami & B.S. Arya - synonym of *I. coromandelina* L.f.; not endemic.
51. *Isoetes pantii* var. *hybrida* Goswami (2004), *nom. inval*. (no type) and incorrect rank - unidentified, dubious taxon; doubtfully endemic (C. India).
52. *Isoetes rajasthanensis* Gena & Bhardwaja - unidentified, dubious taxon; doubtfully endemic (C. India).
53. *Isoetes reticulata* Gena & Bhardwaja - unidentified, dubious taxon; doubtfully endemic.
54. *Isoetes sahyadriensis* Mahab. - synonym of *I. coromandelina* L.f.; not endemic.
55. *Isoetes sampathkumaranii* ["*sampathkumarani*"] L.N.Rao - synonym of *I. coromandelina* L.f.; not endemic.
56. *Isoetes tuberculata* Gena & Bhardwaja (*sub* "*I. tuberosa*" in Dixit and Bal Krishna, 1989) - synonym of *I. coromandelina* L.f.; not endemic.
57. *Isoetes udupiensis* P.K.Shukla, G.K. Srivastava, S.K. Shukla & P.K. Rajagopal - unidentified, dubious taxon; doubtfully endemic (S. India).
58. *Isoetes unilocularis* D.D. Pant & G.K. Srivast. - synonym of *I. indica* D.D. Pant & G.K. Srivast., unidentified, dubious taxon; doubtfully endemic (S. and C. India).

Ophioglossum

59. *Botrypus lanuginosus* (Wall. *ex* Hook. & Grev.) Holub subsp. *nepalensis* (Nishida) S.R. Ghosh - synonym of *Botrychium lanuginosum* Wall. *ex* Hook. & Grev.; neither entity is endemic.
60. *Ophioglossum eliminatum* Khand. & Goswami - unidentified taxon, named on cytological grounds and requiring further taxonomic and nomenclatural study; perhaps a synonym of *O. nudicaule* L.f.; not endemic.
61. *Ophioglossum oleosum* Khand. - synonym of *O. nudicaule* L.f.; not endemic.

Helminthostachys

62. *Helminthostachys laciniata* Voigt - synonym of *Helminthostachys zeylanica* (L.) Hook.; not endemic.

Angiopteris - *A. evecta* (G. Forst.) Hoffm. from Tahiti does not occur in India, where it is replaced by *A. indica* Desv. and *A. helferiana* C.Presl (see Fraser-Jenkins, 2008, in press).

63. *Angiopteris arnottiana* Miq. - synonym of *A. indica* Desv.; not endemic.
64. *Angiopteris assamica* de Vriese - synonym of *A. helferiana* C.Presl; not endemic.
65. *Angiopteris campsophlebia* de Vriese - synonym of *A. helferiana* C. Presl, not endemic.
66. *Angiopteris distans* C. Presl - synonym of *A. indica* Desv.; not endemic.
67. *Angiopteris gaudichaudiana* de Vriese - synonym of *A. helferiana* C.Presl; not endemic.
68. *Angiopteris hookeriana* de Vriese - synonym of *A. indica* Desv.; not endemic.
69. *Angiopteris huegeliana* C. Presl - synonym of *A. indica* Desv.; not endemic.
70. *Angiopteris laciniata* de Vriese - synonym of *A. indica* Desv.; not endemic.
71. *Angiopteris latifolia* C. Presl - synonym of *A. indica* Desv.; not endemic.
72. *Angiopteris macrocephala* C. Presl - synonym of *A. helferiana* C.Presl; not endemic.
73. *Angiopteris manniana* Rosenst. - synonym of *A. indica* Desv.; not endemic.
74. *Angiopteris repandula* de Vriese - synonym of *A. indica* Desv.; not endemic.
75. *Angiopteris salicifolia* (C. Presl) de Vriese - synonym of *A. helferiana* C. Presl; not endemic.
76. *Angiopteris wightiana* de Vriese - synonym of *A. helferiana* C. Presl; not endemic.

Christensenia

77. *Christensenia assamica* (Griff.) Ching - synonym of *C. aesculifolia* (Blume) Maxon (syn.: *Kaulfussia assamica* Griff.); not endemic. Rolleri (1993) applied the name *C. aesculifolia* subsp. *korthalsii* (de Vriese) Rolleri to the Indian *etc.* plant, after study of the surface-indument, but with insufficient taxonomic consideration.

Osmunda

78. *Osmunda claytoniana* L. var. *vestita* Wall. *ex* Milde - synonym of *O. claytoniana* L. subsp. *vestita* (Wall. *ex* Milde) Å. Löve & D. Löve; not endemic.
79. *Osmunda regalis* L. var. *panigrahiana* R.D. Dixit - synonym of *O. huegeliana* C.Presl; endemic (S. and C. India).
80. *Osmunda huegeliana* C.Presl - endemic (S. and C. India).

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Plagiogyria

81. *Plagiogyria coerulescens* Ching - synonym of *P. pycnophylla* (Kunze) Mett.; not endemic.
82. *Plagiogyria elongata* R.D. Dixit & A. Das - synonym of *P. euphlebia* (Kunze) Mett.; not endemic.
83. *Plagiogyria meghalayensis* R.D. Dixit & A. Das - synonym of *P. adnata* (Blume) Bedd.; not endemic.
84. *Plagiogyria minguigensis* R.D. Dixit & A. Das - synonym of *P. pycnophylla* (Kunze) Mett.; not endemic.
85. *Plagiogyria triquetra* Wall. *ex* Mett. (Ghosh et al., 2004) - not endemic.

Lygodium

86. *Lygodium longifolium* (Willd.) Sw. - not endemic.

Dipteris

87. *Dipteris wallichii* (R.Br.) T.Moore - not endemic.

Dicranopteris

88. *Dicranopteris linearis* (Burm.f.) Underw. var. *brevis* Manickam & Irud. - synonym of *D. linearis* (Burm.f.) Underw. *sensu stricto*; not endemic.
89. *Dicranopteris linearis* (Burm.f.) Underw. var. *hirta* S.Kaur & Punetha - synonym of *D. lanigera* (D.Don) Fras.-Jenk. (2008, in press); not endemic.
90. *Dicranopteris linearis* (Burm.f.) Underw. var. *inaequiloba* B.K. Nayar & Geev. - synonym of *D. linearis* (Burm.f.) Underw. *sensu stricto*; not endemic.
91. *Dicranopteris linearis* (Burm.f.) Underw. var. *sebastineana* ["*sebastiana*"] Panigrahi & R.D. Dixit - synonym of *D. taiwanensis* Ching & P.S. Chiu; not endemic.
92. *Dicranopteris linearis* (Burm.f.) Underw. var. *tenuis* Manickam & Irud. - synonym of *D. linearis* (Burm.f.) Underw. *sensu stricto*; not endemic.
93. *Dicranopteris linearis* (Burm.f.) Underw. var. *wattii* Panigrahi & R.D. Dixit - possible synonym of *Dicranopteris curranii* Copel.; not endemic.

Drynaria

94. *Drynaria meeboldii* Rosenst. - synonym of *D. bonii* Christ; not endemic.
95. *Drynaria prolifera* P.C. Pande & H.C. Pande - synonym of *D. propinqua* (Wall. *ex* Mett.) J.Sm.; not endemic. Definitively re-identified as *D. propinqua* by the author for P.C. Pande in *c.* 1995.

Arthromeris

96. *Arthromeris gamblei* S.R. Ghosh - synonym of *A. mairei* (Brause) Ching; not endemic.
97. *Arthromeris himalayensis* (Hook.) Ching var. *furcans* Ching - synonym of *A. lehmanii* (Mett.) Ching; not endemic.
98. *Arthromeris indica* S.R. Ghosh - synonym of *A. mairei* (Brause) Ching; not endemic.
99. *Arthromeris jarrettiae* ["*jarrettii*"] Sastry & S. Chowdhury - synonym of *A. lehmanii* (Mett.) Ching; not endemic. This is a single, abnormal collection with emarginate notches by the sori, but the rhizome-scales confirm its identity as a specimen of *A. lehmanii* (Fraser-Jenkins, 2008, in press).
100. *Arthromeris lungtauensis* Ching var. *sikkimensis* S.R. Ghosh - synonym of *A. tatsienensis* (Franch. & Bureau *ex* Christ) Ching; not endemic. *A. lungtauensis* Ching does not occur in India.
101. *Arthromeris* x *purohitii* H.C. Pande & P.C. Pande - synonym of *A. wallichiana* (Spreng.) Ching; not endemic. A slightly abnormal, irregular individual, definitively re-identified as *A. wallichiana* by the author for P.C. Pande in *c.* 1995.
102. *Arthromeris repandula* Ching - synonym of *A. mairei* (Brause) Ching; not endemic.
103. *Arthromeris wallichiana* (Spreng.) Ching var. *biserialis* (C.B.Clarke) S.R.Ghosh - synonym of *A. mairei* (Brause) Ching; not endemic.

Crypsinus

104. *Phymatopteris ebenipes* (Hook.) Pic. Serm. var. *oakesii* (C.B.Clarke) Bir & Satija - synonym of *Crypsinus subebenipes* (Ching) *ined.* (syn.: *C. nepalensis* Nakaike); not endemic. But type-material at Kew not yet studied by the author.
105. *Phymatodes erythrocarpa* (Mett. *ex* Kuhn) Ching - synonym of *Crypsinus erythrocarpus* (Mett. *ex* Kuhn) Tagawa; not endemic.
106. *Phymatopsis decurrentialata* (Rosenst.) S.R. Ghosh - synonym of *Crypsinus crenatopinnatus* (C.B. Clarke) Copel.; not endemic.
107. *Phymatopteris griffithiana* (Hook.) Pic. Serm. - synonym of *Crypsinus griffithianus* (Hook.) Copel.; not endemic.
108. *Phymatopteris nakaikeanum* ["*nakaikeium*"] P.C.Pande & H.C.Pande - synonym of *Crypsinus ebenipes* (Hook.) Copel.; not endemic. Definitively re-identified as *C. ebenipes* by the author for P.C. Pande in *c.* 1995.
109. *Phymatopsis oxyloba* (Wall. *ex* Kunze) Ching var. *thunbergii* (C.B. Clarke) S.R.Ghosh - synonym of *Crypsinus oxylobus* (Wall. *ex* Kunze) Sledge; not endemic.

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110. *Phymatopteris pangteyi* ["*pangteyii*"] H.C. Pande & P.C. Pande - synonym of *Crypsinus malacodon* (Hook.) Copel.; not endemic. Definitively re-identified as *C. malacodon* by the author for P.C. Pande in *c*. 1995.
111. *Christiopteris tricuspis* (Hook.) Christ - not endemic.

Lemmaphyllum

112. *Lemmaphyllum carnosum* (Wall. *ex* J.Sm.) C. Presl var. *longifolium* Rahman & T. Sen - synonym of *L. carnosum* (Wall. *ex* J. Sm.) C. Presl; not endemic. The variety is not of taxomomic significance.
113. *Lepidogrammitis sikkimensis* S.R. Ghosh - synonym of *Lemmaphyllum rostratum* (Bedd.) Tagawa; neither is endemic.

Lepisorus

114. *Lepisorus amaurolepidus* (Sledge) Bir & Trikha [= Satija] var. *longifolius* Bir & Trikha - synonym of *L. nudus* (Hook.) Ching; not endemic.
115. *Lepisorus excavatus* (Bory *ex* Willd.) Ching var. *himalayensis* Bir & Trikha - synonym of *L. scolopendrium* (Ching) Mehra & Bir (Fraser-Jenkins, 2008, in press); not endemic.
116. *Lepisorus excavatus* (Bory *ex* Willd.) Ching var. *mortonianus* Bir & Trikha - synonym of *L. scolopendrium* (Ching) Mehra & Bir (Fraser-Jenkins, 2008 in press); not endemic.
117. *Lepisorus intermedius* Ching & Khullar - synonym of *L. nudus* (Hook.) Ching; not endemic.
118. *Lepisorus jakonensis* (Blanf.) Ching - synonym of *L. pseudonudus* Ching; not endemic.
119. *Lepisorus kashyapii* (Mehra) Mehra, *nom. nud*. - synonym of *L. mehrae* Fras.-Jenk.; not endemic.
120. *Lepisorus kashyapii* (Mehra) Mehra, *nom. nud*., var. *major* Bir & Trikha - synonym of *L. mehrae* Fras.-Jenk.; not endemic.
121. *Lepisorus kashyapii* (Mehra) Mehra, *nom. nud*. var. *minor* Bir & Trikha - synonym of *L. mehrae* Fras.-Jenk.; not endemic.
122. *Lepisorus khullarii* P.C.Pande & K.H.Shing - synonym of *L. contortus* (Christ) Ching; not endemic.
123. *Lepisorus krameri* ["*kramerii*"] P.C. Pande & H.C.Pande - synonym of *L. scolopendrium* (Ching) Mehra & Bir; not endemic. Re-identified as *L. scolopendrium* (*sub L. sesquipedalis* (J.Sm.) Fras.-Jenk., *nom. superfl*.) by the author for P.C. Pande in *c*. 1995.
124. *Lepisorus leiopteris* (Kunze) Bir & Trikha - synonym of *L. nudus* (Hook.) Ching; not endemic. Name misapplied to *L. scolopendrium* by Bir and others.
125. *Lepisorus sordidus* (C. Chr.) Ching - not endemic.
126. *Lepisorus stewartii* Ching - synonym of *L. thunbergianus* (Kaulf.) Ching; not endemic.
127. *Lepisorus sublinearis* (Baker) Ching - not endemic.
128. *Lepisorus tenuicauda* Ching - synonym of *L. loriformis* (Wall. *ex* Mett.) Ching; not endemic.
129. *Lepisorus tenuipes* Ching & Khullar - synonym of *L. nudus* (Hook.) Ching; not endemic.

Microsorum

130. *Microsorum indicum* Ching - synonym of *M. zippelii* (Blume) Ching; not endemic.

Phymatosorus

131. *Phymatodes banerjiana* S. Pal & N. Pal, from cultivation in Calcutta Botanical Garden - synonym of *Phymatosorus scolopendria* (Burm.f.) Pic.Serm., an adventive species in India; not endemic. Pal's sense of "*P. scolopendria*" was the cultivated *Microsorum hainanense* Noot. (*i.e. Phymatosorus* ?*papuanus* (Baker) Fras.-Jenk. (2008, in press)), not native to India.
132. *Phymatosorus beddomei* S.R. Ghosh - probable synonym of *Phymatosorus cuspidatus* (D. Don) Pic.Serm.; not endemic. The S. Indian plants have slightly more adnate pinnae and might represent an endemic subspecies of *P. cuspidatus*.
133. *Microsorum malabaricum* B.K. Nayar & Geev. (syn.: *Phymatosorus malabaricus* Geev. *ex* Nampy & Madhus.) - holotype lost at CALI, isotype in herb. Geevarghese, Kodumon, Kerala; a single juvenile, precociously fertile collection, probably belonging to *Phymatosorus membranifolius* (R. Br.) S.G. Lu (1999) (syn.: *Phymatosorus nigrescens* (Blume) Pic.Serm.); not endemic.

Leptochilus

134. *Nistarika bahupunctika* B.K.Nayar, Madhus. & Molly (syn.: *Leptochilus bahupunctika* (B.K. Nayar et al.) Nampy) - synonym of *Leptochilus axillaris* (Cav.) Kaulf.; not endemic.
135. *Colysis latiloba* (Ching) Ching - synonym of *Leptochilus pothifolius* (D. Don) Fras.-Jenk. (2008, in press); not endemic. The name *C. pothifolia* has been misapplied in India to *L. elliptica* (Thunb.) Noot.
136. *Dendroglossa minutula* (Fée) Copel. - synonym of *Leptochilus minor* Fée; not endemic.

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Polypodiodes

137. *Polypodium amoenum* Wall. *ex* Mett. var. *pinnatifidum* ["*pinnatifida*"] Dhir, *nom. nud.* (syn.: *Polypodiodes amoena* (Wall. *ex* Mett.) Ching var. *pinnatifidum* (Dhir) P.C. Pande, *nom. nud.*) - synonym of *Polypodiodes amoena* (Wall. *ex* Mett.) Ching; not endemic.
138. *Polypodium amoenum* Wall. *ex* Mett. var. *xerophyticum* Mehra & Bir (syn.: *Polypodioides amoena* (Wall. *ex* Mett.) Ching var. *xerophyticum* (Mehra & Bir) P.C. Pande & H.C. Pande) - synonym of *Polypodiodes amoena* (Wall. *ex* Mett.) Ching; not endemic. The variety is not of taxonomic significance.
139. *Goniophlebium krameri* Panigrahi & Sarn.Singh - synonym of *Polypodiodes amoena* (Wall. *ex* Mett.) Ching; not endemic.
140. *Polypodiodes subamoena* (C.B. Clarke) Ching - not endemic.
141. *Polypodiodes wattii* (Bedd.) Ching - not endemic.

Pyrrosia

142. *Pyrrosia arunachalensis* Sarn. Singh & Panigrahi - synonym of *P. rasamalae* (Racib.) K.H. Shing; not endemic.
143. *Pyrrosia boothii* (Hook.) Ching - not endemic.
144. *Pyrrosia drakeana* (Franch.) Ching - not endemic.
145. *Pyrrosia laevis* (J. Sm. *ex* Bedd.) Ching - not endemic.
146. *Pyrrosia mannii* (Gies.) Ching - not endemic.
147. *Pyrrosia mannii* (Gies.) Ching var. *birii* [originally as "*P. birii*"] P.C. Pande & H.C. Pande - synonym of *P. mannii* (Gies.) Ching; not endemic. Definitively re-identified as *P. mannii* by the author for P.C. Pande in *c*. 1995.
148. *Pyrrosia nayariana* Ching & P. Chandra - synonym of *P. stenophylla* (Bedd.) Ching; not endemic.
149. *Pyrrosia stenophylla* (Bedd.) Ching (syn.: *P. porosa* (C. Presl) Hovenkamp var. *stenophylla* (Bedd.) Hovenkamp); not endemic.

Loxogramme

150. *Loxogramme avalanchica* ["*avalanchia*"] R.D. Dixit - synonym of *L. chinensis* Ching; not endemic.
151. *Loxogramme cuspidata* (Zenker) Price - not endemic. Reported from S. India as *L. involuta* (D. Don) C. Presl, in error.
152. *Loxogramme mussooriana* R.D. Dixit & A. Das - synonym of *L. involuta* (D. Don) C. Presl; not endemic.

Oreogrammitis

153. *Oreogrammitis pilifera* (Ravi & J. Joseph) Parris (2007) - endemic (S. India), where *O. medialis* (Baker) Parris does not occur.

Trichomanes

154. *Trichomanes agasthianum* (Madhus. & C.A. Hameed) C.A. Hameed, K.P. Rajesh & Madhus. (2003) - dubious taxon; possibly endemic (S. India).
155. *Vandenboschia anceps* (C.B. Clarke) S. Chandra & S. Kaur - synonym of *Trichomanes birmanicum* Bedd.; not endemic.
156. *Crepidomanes christii* (Copel.) Madhus. & Hameed (syn.: *Trichomanes barnardianum* F.M.Bailey subsp. *christii* (Copel.) Croxall) - synonym of *Trichomanes christii* Copel.; not endemic. The identity of the Indian (S. Indian) plant is under study by the author and requires confirmation as the sori are less crowded near the frond-apex and the lamina is longer and the pinnae less pseudo-radiate.
157. *Trichomanes indicum* (C.A. Hameed & Madhus.) C.A. Hameed, K.P. Rajesh & Madhus. (2003) - synonym of *T. kurzii* Bedd.; not endemic.
158. *Trichomanes indicum* S.R. Ghosh (2004), *non* (C.A. Hameed & Madhus.) C.A.Hameed, K.P. Rajesh & Madhus. (2003) - synonym of *T. maximum* Blume; not endemic.
159. *Trichomanes lunulatum* (Madhus. & C.A. Hameed) C.A. Hameed, K.P.Rajesh & Madhus. (syn.: *Crepidomanes lunulatum* Madhus. & Hameed) - synonym of *T. agasthianum* (Madhus. & C.A. Hameed) C.A. Hameed, K.P. Rajesh & Madhus. Dubious taxon; possibly endemic (S. India).
160. *Trichomanes malabaricum* (C.A. Hameed & Madhus.) C.A. Hameed, K.P. Rajesh & Madhus. (2003) - synonym of *T. kurzii* Bedd.; not endemic.
161. *Microgonium nicobaricum* R.D. Dixit & Shweta. Singh (Indian Fern J. 22: 180-182 (2005)) - synonym of *Trichomanes sublimbatum* Müll.Hal.; not endemic (also in Bhutan, coll.: *T. Wangdi*, and S.E. Asia).
162. *Trichomanes proliferum* Blume forma *minutum* Manickam & Irudayaraj, *nom. nud.* - a probable misapplication of *T. minutum* Blume, but the plants concerned are *T. proliferum* Blume; not endemic.
163. *Trichomanes vamana* C.A. Hameed & Madhus. (in C.A. Hameed et al., 2003), *nom. nud.*. - probably a synonym of *Trichomanes henzaianum* Parish *ex* Hook.; not endemic.

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Hymenophyllum

164. *Meringium edentulum* (Bosch) Copel. - neither endemic, nor present in India.
165. *Mecodium levingei* (C.B. Clarke) Copel. - synonym of *H. levingei* C.B. Clarke; not endemic.

Pteris

166. *Pteris almeidiana* Bole & M.R. Almeida - synonym of *P. otaria* Bedd.; not endemic.
167. *Pteris argyrea* T. Moore - not endemic.
168. *Pteris barbigera* Ching, probably not endemic as *P. squamaestipes* C. Chr. & Tardieu appears to be the same species.
169. *Pteris beddomei* Sarn.Singh & Panigrahi - synonym of *P. tibetica* Ching; not endemic.
170. *Pteris excelsa* Gaudich. var. *rotunda* ["*rotundus*"] H.C. Pande & P.C. Pande - synonym of *P. excelsa* Gaudich.; not endemic. A young, slightly precociously fertile plant. Definitively re-identified as *P. excelsa* by the author for P.C. Pande in *c*. 1995.
171. *Pteris furunculata* N.C. Nair & S.R. Ghosh - synonym of *P. praetermissa* T.G. Walker; not endemic. The reported laminar pustules are inconstant and not a permanent feature, nor connected with the identity of the species. This species is also close to *P. khasiana* (C.B. Clarke) Hieron., which is not endemic. It is a common S. Indian and Sri Lankan plant and has been widely misreported as *P. aspericaulis* Wall. *ex* J.Agardh. It is currently under cultivation and further study by the present author and requires comparison with S.E. Asian species and others described by Hieronymus. *P. praetermissa* may perhaps not be the earliest name.
172. *Pteris griffithii* Hook. - not endemic.
173. *Pteris himalayensis* S.R. Ghosh - synonym of *P. medogensis* Ching & S.K. Wu; not endemic.
174. *Pteris khasiana* (C.B. Clarke) Hieron. - not endemic.
175. *Pteris* x *khullarii* Pangtey, Samant & S. Verma - synonym of *P. wallichiana* J. Agardh. An abnormal, monstrous frond; spores mostly young, not abortive, not hybrid.
176. *Pteris linearis* Poir. var. *manipurensis* S.R. Ghosh - synonym of *P. arisanensis* Tagawa (syn.: *P. confusa* T.G.Walker); not endemic.
177. *Pteris nepalensis* H.Itô - synonym of *P. pubescens* Ching; not endemic.
178. *Pteris panigrahiana* Sarn.Singh - synonym of *P. tibetica* Ching. not endemic.
179. *Pteris perrottetei* Hieron. - endemic (S. India).
180. *Pteris perrottetii* Hieron. var. *brevilaciniata* Hieron. - unidentified taxon, perhaps a synonym of *P. praetermissa* T.G.Walker (see *sub P. furunculata* above).
181. *Pteris prainii* S.R.Ghosh - synonym of *P. cretica* L. subsp. *laeta* (Wall. *ex* Ettingsh.) Fras.-Jenk., not endemic.
182. *Pteris pseudoconfusa* Sarn.Singh & Panigrahi - synonym of *P. khasiana* (C.B.Clarke) Hieron., not endemic.
183. *Pteris pseudoesquirolii* ["*pseudoesquirollii*"] S.R.Ghosh - synonym of the *P. pellucida* C.Presl agg., at least *sensu auct. Ind*., neither entity is endemic. True *P. pellucida* from the Philippines has entirely untoothed segments, like the Indian plants, but considerably narrower fertile segments. The type has furcate lowest pinnae on the sterile fronds, but this is variable in both India and the Philippines. Some plants in Myanmar *etc*. have long fertile laminae with shortish, patent, all simple pinnae, unlike the Philippine plant, which has only a few, long, semi-erect fertile pinnae. The Indian plant is different from either in this respect and varies in having some plants with narrower, paler green sterile pinnae (the only representative in the Himalaya) and some with wider, darker pinnae (common in S. India). A full cytotaxonomic study of the group in India and adjacent regions is required along with careful typification; but the author does not now accept either of the entire-margined Indian plants as being *P. pellucida*. The wider-segmented plant from S. India appears to be *P. venusta* Kunze and the Himalayan plant has probably been named from China.
184. *Pteris pseudopellucida* Ching - not endemic.
185. *Pteris quadriaurita* var. *argentea* Bedd. - synonym of *P. argyrea* T. Moore, not endemic (though plants from Java *etc*. appear to be a different species).
186. *Pteris raghavendrae* ["*raghavendreii*"] H.J. Chowdhery & Sur.Singh - synonym of *P. wallichiana* J.Agardh, not endemic.
187. *Pteris silentvalliensis* S.R.Ghosh - synonym of *P. scabripes* Wall. *ex* J.Agardh, not endemic. Fraser-Jenkins (1997) misidentified it as *P. multiaurita* J.Agardh.
188. *Pteris stenophylla* Wall. *ex* Hook. & Grev. - not endemic.
189. *Pteris subhirtula* Sarn.Singh & Panigrahi - synonym of *P. hirtula* (C.Chr.) C.V.Morton (syn.: *P. hekouensis* Ching *ex* Ching & S.H.Wu, not *P. barbigera* as stated by Fraser-Jenkins, 1997), not endemic.

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190. *Pteris subindivisa* C.B.Clarke - not endemic. Related to *P. tibetica* Ching, occuring from Nepal to Tibet, but distinct.
191. *Pteris submiaoensis* Sarn. Singh & Panigrahi - synonym of *P. tibetica* Ching, not endemic.
192. *Pteris subquinata* Wall. *ex* J. Agardh - not endemic.
193. *Pteris tenuissima* Ching - neither endemic nor present in India.
194. *Pteris tirapensis* Panigrahi & Sarn.Singh - synonym of *P. tibetica* Ching, not endemic.
195. *Pteris vijaynagarensis* ["*vijaynagarense*"] Sarn. Singh & Panigrahi - synonym of *P. arisanensis* Tagawa (syn.: *P. confusa* T.G. Walker), not endemic.
196. *Pteris vittata* L. subsp. *bengalensis* Fras.-Jenk. - synonym of *P. vittata* L. subsp. *vittata*, not endemic.
197. *Pteris vittata* L. forma *brevipinna* S.C. Verma - synonym of *P. vittata* L. subsp. *vermae* Fras.-Jenk. (1997), not endemic.
198. *Pteris vittata* L. subsp. *vermae* Fras.-Jenk. - not endemic.

Onychium

199. *Onychium fragile* S.C. Verma & Khullar - synonym of *O. tenuifrons* Ching, not endemic.
200. *Onychium lucidum* (D. Don) Spreng. - synonym of *O. japonicum* (Thunb.) Kunze, neither entity is endemic.
201. *Onychium lucidum* D. Don f. *tenuisectum* S.C. Verma - synonym of *O. cryptogrammoides* Christ, not endemic.

Pellaea

202. *Pellaea boivinii* Hook. - not endemic.
203. *Pellaea malabarica* B.K. Nayar & Geev. - synonym of *P. longipilosa* Bonap. from Africa, not endemic.

Aleuritopteris

204. *Cheilanthes anceps* Blanf. - synonym of *Aleuritopteris anceps* (Blanf.) Panigrahi, not endemic.
205. *Cheilanthes anceps* var. *brevifrons* Khullar (syn.: *C. brevifrons* (Khullar) Khullar) - synonym of *Aleuritopteris formosana* (Hayata) Ching & S.K. Wu, not endemic.
206. *Cheilanthes bullosa* Kunze - synonym of *Aleuritopteris bullosa* (Kunze) Ching, not endemic.
207. *Cheilanthes dalhousieae* ["*dalhousiae*"] Hook., *nom. rejic.* - synonym of *Aleuritopteris albomarginata* (C.B. Clarke) Panigrahi, though widely misapplied to *Aleuritopteris leptolepis* (Fras.-Jenk.) Fras.-Jenk.; neither species is endemic.
208. *Cheilanthes dubia* C. Hope - synonym of *Aleuritopteris dubia* (C. Hope) Ching, not endemic.
209. *Cheilanthes chrysophylla* Hook. - synonym of *Aleuritopteris chrysophylla* (Hook.) Ching, not endemic.
210. *Aleuritopteris doniana* S.K. Wu - synonym of *A. dealbata* Fée, not endemic.
211. *Cheilanthes duthiei* Baker - synonym of *Aleuritopteris duthiei* (Baker) Ching, not endemic.
212. *Cheilanthes flaccida* (Bedd.) Mehra & Bir - synonym of *Aleuritopteris bullosa* (Kunze) Ching, not endemic.
213. *Aleuritopteris flavopygmaea* S.R. Ghosh - synonym of *A. chrysophylla* (Hook.) Ching, not endemic.
214. *Aleuritopteris kathmanduensis* Ching & S.K.Wu - synonym of *A. bicolor* (Roxb.) Fras.-Jenk. & Dulawat (2008, in press), not endemic.
215. *Cheilanthes keralensis* Nair & S.R. Ghosh - synonym of *Aleuritopteris thwaitesii* (Mett. *ex* Kuhn) Saiki, not endemic.
216. *Cheilanthes longipes* (Ching & S.K. Wu) R.D. Dixit & Bal Krishna - synonym of *Aleuritopteris subdimorpha* (C.B. Clarke & Baker) Fras.-Jenk. (in Fraser-Jenkins & Dulawat, 2008, in press), not endemic.
217. *Cheilanthes pulveracea* C. Presl, *nom superfl.* for *Aleuritopteris argyrophylla* (Sw.) Fée from Africa, though misapplied by Fée to *A. mexicana* Fée (syn.: *C. chihuahuaensis* (Saiki) Fras.-Jenk.), from C. and S. America and also to the Indian *A. bicolor* (Roxb.) Fras.-Jenk. & Dulawat. None of these species is endemic to India.
218. *Cheilanthes rufa* D. Don - synonym of *Aleuritopteris rufa* (D. Don) Ching, not endemic.
219. *Aleuritopteris sikkimensis* S.R. Ghosh - synonym of *A. dealbata* Fée (syn.: *Cheilanthes doniana* Fras.-Jenk. & Khullar), not endemic.

(hybrid) - not meaningful in terms of endemism.

220. *Cheilanthes* x *vermae* Fras.-Jenk. & Viane - synonym of *Aleuritopteris* x *vermae* (Fras.-Jenk. & Viane) Fras.-Jenk. (2008, in press). Also present in Nepal.

Adiantum

221. *Adiantum assamicum* B.K. Nayar (syn.: *A. caudatum* L. var. *assamicum* B.K. Nayar, *nom. nud.*) - synonym of *A. caudatum* L., not endemic.

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222. *Adiantum capillus-veneris* L. var. *dissectum* B.K. Nayar - synonym of *A. capillus-veneris*; not worthy of taxonomic recognition, not endemic.
223. *Adiantum fimbriatum* Christ - synonym of *A. venustum* D. Don, not endemic.
224. *Adiantum incisum* Forssk. subsp. *incisum* - not endemic.
225. *Adiantum indicum* Ghatak - synonym of *A. recurvatum* (D. Don) Fras.-Jenk. (2008, in press) (syn.: *A. incisum* Forssk. subsp. *indicum* (Ghatak) Fras.-Jenk.) - insufficently known taxonomically or geographically, but almost certainly not endemic.
226. *Adiantum lomesam* B.K. Nayar & Geev. - synonym of *A. caudatum* L., not endemic.
227. *Adiantum nagnam* B.K. Nayar & Geev. - synonym of *A. zollingeri* Mett. *ex* Kuhn, not endemic.
228. *Adiantum peruvianum* Klotzsch - cultivated adventive in India, not endemic.
229. *Adiantum ramyam* B.K. Nayar - synonym of *A. concinnum* Humb., adventive in India, not endemic.
230. *Adiantum wattii* Baker (syn.: *A. capillus-veneris* var. *wattii* (Baker) C. Chr.) - not endemic.

Coniogramme

231. *Coniogramme affinis* Wall. *ex* Hieron. - not endemic.
232. *Coniogramme denticulatoserrata* (Hieron.) R.D.Dixit & A.Das - synonym of *C. serrulata* (Blume) Fée, not endemic.
233. *Coniogramme falcata* (D.Don) Salomon (Ghosh *et al.*, 2004) - synonym of *C. fraxinea* (D.Don) Fée *ex* Diels, not endemic.
234. *Coniogramme fraxinea* (D.Don) Fée *ex* Diels var. *tirapensis* Sarn.Singh - synonym of *C. fraxinea* (D.Don) Fée, not endemic.
235. *Coniogramme indica* Fée - synonym of *C. serrulata* (Blume) Fée, not endemic.
236. *Coniogramme purpurea* R.D.Dixit & A.Das - synonym of *C. serrulata* (Blume) Fée, not endemic.

Vittaria

237. *Vittaria* elongata Sw. var. *angustifolia* Holttum *ex* Balakrishnan (Bull. Bot. Surv. India 22: 137 (1982)), from the Nicobar Islands - synonym of *V. elongata* Sw., not endemic.
238. *Vittaria arunachalensis* R.D.Dixit - synonym of *V. flexuosa* (Mett.) Fée, not endemic.
239. *Vittaria doniana* Hieron. var. *intermedia* Hieron. - unidentified taxon at incorrect rank, presumably not endemic.
240. *Vittaria garhwalensis* R.D.Dixit - synonym of *V. flexuosa* (Mett.) Fée (not of *V. himalayensis* Ching as given by Fraser-Jenkins, 1997), not endemic.
241. *Vittaria himalayensis* Ching - synonym of *V. taeniophylla* Copel., neither entity is endemic.
242. *Vittaria montana* Manickam - synonym of *V. ensiformis* Sw., not endemic.
243. *Vittaria wattii* R.D.Dixit & N.C.Nair - synonym of *V. amboinensis* Fée, not endemic.

Marsilea - there are probably no *Marsilea* species endemic to India, but like *Isoetes* the problems of delineating species as opposed to mere minor variation in this genus in India have not been resolved. Many names exist which require further study, but may all belong to *c.* 3 actual species, none of which is endemic.

244. *Marsilea condensata* Baker - dubious taxon, probably not endemic.
245. *Marsilea coromandelica* Burm.f., *nom. superfl.* - synonym of *M. quadrifolia* L., not present in India, not endemic. Name misapplied to *M. coromandelina* Willd.
246. *Marsilea gracilenta* A.Braun - synonym of *M. minuta* L., not endemic.
247. *Marsilea kedarmalii* Bhardwaja, Gena & D'Souza - dubious taxon, probably not endemic.
248. *Marsilea maheshwarii* Gopal - synonym of *M. minuta* L., not endemic.
249. *Marsilea major* (Haines) N.P.Chowdhury - synonym of *M. minuta* L., not endemic.
250. *Marsilea minuta* L. - not endemic.
251. *Marsilea minuta* L. var. *indica* Gupta - synonym of *M. minuta* L., not endemic.
252. *Marsilea poonensis* Kolhatkar - dubious taxon, probably not endemic.
253. *Marsilea rajasthanensis* Gupta var. *rajasthanensis* - synonym of *M. aegyptiaca* Willd., not endemic.
254. *Marsilea rajasthanensis* Gupta var. *ballardii* (Gupta) Gupta - error for *M. ballardii* Gupta var. *ballardii*; synonym of *M. aegyptiaca* Willd., not endemic.

Cyathea

255. *Cyathea albosetacea* (Bedd.) Copel. - endemic (Nicobar islands).
256. *Alsophila andersonii* J.Scott *ex* Bedd. (syn.: *Gymnosphaera andersonii* (J.Scott *ex* Bedd.) Ching) - synonym of *Cyathea andersonii* (J.Scott *ex* Bedd.) Copel., not endemic.

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257. *Alsophila andersonii* J. Scott. *ex* Bedd. var *miaoensis* Sarn.Singh & Panigrahi - synonym of *Cyathea andersonii* (J. Scott *ex* Bedd.) Copel., not endemic.
258. *Cyathea balakrishnanii* R.D. Dixit & A.K. Tripathi - synonym of *C. gigantea* (Wall. *ex* Hook.) Holttum, not endemic.
259. *Hemitelia decipiens* (J. Scott *ex* Bedd.) J.Scott - synonym of *Cyathea spinulosa* Wall. *ex* Hook., not endemic.
260. *Cyathea gamblei* R.D. Dixit - unidentified, dubious taxon, probably a synonym of *C. henryi* (Baker) Copeland, which is not endemic
261. *Cyathea holttumiana* R.R. Rao & Jamir - probable synonym of *C. brunoniana* (Wall. *ex* Hook.) C.B. Clarke & Baker, not endemic.
262. *Alsophila khasyana* T. Moore *ex* Kuhn - synonym of *Cyathea khasyana* (T.Moore *ex* Kuhn) Domin, not endemic.
263. *Cyathea nayarii* Bandyopadhay, T. Sen & U. Sen (2004) - unidentified collection, unlikely to be endemic, but type not seen by the author.
264. *Cyathea nicobarica* N.P.Balakr. & R.D.Dixit - unidentified species, perhaps endemic if distinct.
265. *Cyathea nilgirensis* Holttum - endemic (S. India).
266. *Cyathea nilgirensis* Holttum var. *lobata* ["*lobatus*"] Manickam & Irudayaraj - synonym of *C. nilgirensis* Holttum, variety not of taxonomic significance, endemic (S. India).
267. *Alsophila oldhamii* Bedd. - synonym of *Cyathea khasyana* (T.Moore *ex* Kuhn) Domin, not endemic.
268. *Alsophila ornata* J. Scott *ex* Bedd. - synonym of *Cyathea khasyana* (T.Moore *ex* Kuhn) Copel., not endemic.
269. *Cyathea sharmae* Bandyopadhyay, T.Sen & U.Sen (2004) - unidentified collection, unlikely to be endemic, but type not seen by the author.
270. *Cyathea sikkimensis* (C.B.Clarke & Baker) Cretz. - synonym of *C. khasyana* (T. Moore *ex* Kuhn) Domin, not endemic.
271. *Alsophila suprasora* Panigrahi & Sarn. Singh - synonym of *Cyathea andersonii* (J. Scott *ex* Bedd.) Copel., not endemic.

Cibotium

272. *Cibotium barometz* (L.) J. Sm. - not endemic.

Dennstaedtia

273. *Dennstaedtia appendiculata* var. *elwesii* (Baker) Bedd. (syn.: *Emodiopteris elwesii* (Baker) Ching & S.K.Wu) - synonym of *D. appendiculata* (Wall. *ex* Hook.) J. Sm., not endemic.

Microlepia

274. *Microlepia brevistrigosa* A.Biswas - synonym of *M. trichocarpa* Hayata, not endemic (Fraser-Jenkins, 2008, in press).
275. *Microlepia marginata* (Panz.) C.Chr. var. *calvescens* (Wall. *ex* Hook.) N.C.Nair - synonym of *M. calvescens* (Wall. *ex* Hook.) C.Presl, not endemic.
276. *Microlepia firma* Mett. *ex* Kuhn - not endemic.
277. *Microlepia firma* Mett. *ex* Kuhn var. *hirta* (Kaulf.) Sledge - synonym of *M. setosa* (Sm.) Alston, not endemic.
278. *Microlepia haflangensis* B.K.Nayar & S.Kaur - synonym of *M. hancei* Prantl (and perhaps both also of *M. pilosiuscula* (Sm.) C.V.Morton; but not of *M. proxima* (Blume) C.Presl or *M. todayensis* Christ as tentatively mentioned by Fraser-Jenkins (1997)), not endemic.
279. *Microlepia hallbergii* (d'Almeida) C.Chr. - not endemic.
280. *Microlepia khasiyana* (Hook.) C.Presl - synonym of *M. strigosa* (Thunb.) C.Presl, neither entity is endemic.
281. *Microlepia macrorhomboidea* Sarn.Singh & Panigrahi - synonym of *M. rhomboidea* (Wall. *ex* Kunze) Prantl, not endemic.
282. *Microlepia macrosora* A.Biswas - synonym of *M. hallbergii* (d'Almeida) C.Chr., not endemic.
283. *Microlepia manohara* B.K.Nayar & Madhus. - probable synonym of *M. hancei* Prantl (and perhaps both also of *M. pilosiuscula* (Sm.) C.V.Morton), neither is endemic.
284. *Microlepia oblongifolia* A.Biswas - synonym of *M. hallbergii* (d'Almeida) C.Chr., not endemic.
285. *Microlepia rhomboidea* (Wall. *ex* Kunze) Prantl - not endemic.
286. *Microlepia sikkimensis* A.Biswas - synonym of *M. rhomboidea* (Wall. *ex* Kunze) Prantl, not endemic.
287. *Microlepia singhii* Panigrahi - synonym of *M. rhomboidea* (Wall. *ex* Kunze) Prantl, not endemic.
288. *Microlepia speluncae* var. *pubescens* (Hook.) Sledge - synonym of *M. speluncae* (L.) T.Moore, not endemic.
289. *Microlepia tamenlongensis* A. Biswas - synonym of *M. rhomboidea* (Wall. *ex* Kunze) Prantl, not endemic.
290. *Microlepia viridula* A. Biswas - synonym of *M. rhomboidea* (Wall. *ex* Kunze) Prantl, not endemic.

Hypolepis

291. *Hypolepis coerulescens* A. Biswas - synonym of *H. polypodioides* (Blume) Hook., not endemic.

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292. *Hypolepis gamblei* A. Biswas - synonym of *H. polypodioides* (Blume) Hook., not endemic.
293. *Hypolepis indica* A. Biswas - synonym of *H. polypodioides* (Blume) Hook., not endemic.
294. *Hypolepis longa* A. Biswas (syn.: *H. glandulifera* Brownsey & Chinnock) - synonym of *H. resistens* (Kunze) Hook., not endemic (see Fraser-Jenkins, 2008, in press).
295. *Hypolepis sikkimensis* A. Biswas - synonym of *H. polypodioides* (Blume) Hook., not endemic.
296. *Hypolepis viridula* A. Biswas - synonym of *H. polypodioides* (Blume) Hook., not endemic.

Lindsaea

297. *Lindsaea andamanica* R.D.Dixit & B.Ghosh - dubious taxon, most probably a form and synonym of *L. obtusa* J.Sm., not endemic.
298. *Lindsaea beddomei* ["*beddomea*"] R.D.Dixit & B.Ghosh - synonym of *L. heterophylla* Dryand., not endemic.
299. *Lindsaea ensifolia* Sw. var. *gigantea* B.K.Nayar & Geev. - synonym of *L. ensifolia* Sw., not endemic.
300. *Schizolegnia indica* Bole & M.R. Almeida (syn.: "*Lindsaea indica* (Bole & d'Almeida) S.Chandra" *comb. inval.*) - synonym of *L. heterophylla* Dryand., not endemic.
301. *Lindsaea malabarica* (Bedd.) Baker - endemic (S. and S.C. India).
302. *Lindsaea odorata* Roxb. var. *darjeelingensis* T. Sen & U. Sen - synonym of *L. odorata* Roxb., variety not of taxonomic significance, not endemic.
303. *Lindsaea rutlandica* ["*rutlandia*"] R.D.Dixit & B.Ghosh - synonym of *L. walkerae* Hook., not endemic.
304. *Schizolegnia savantwadiensis* Bole & M.R.Almeida - synonym of *Lindsaea savantwadiensis* (Bole & M.R.Almeida) S.Chandra & S.Kaur; both are synonyms of *L. heterophylla* Dryand., not endemic.
305. *Lindsaea tenera* Dryand. - endemic (Nicobar islands).

Asplenium - the genus *Hymenasplenium*, which has been revived by some molecular workers, particularly in Japan, is not recognised here as worthy of generic rank. Its obvious similarity to other *Asplenium* species should not be ignored and the separation of this group of species, more appropriately treated as a section, on the basis of the creeping rhizome and aneuploid chromosome-number does not hold good as both characters break down and are not diagnostic. This case is an example of molecular differences alone being insufficient to justify interference with character-based taxonomy. *Ceterach*, *Ceterachopsis*, *Sinephropteris* and *Neottopteris* (Sect. *Thamnopteris*) are also not recognised as genera.

306. *Asplenium affine* Sw. f. *majus* Sledge - synonym of *A. affine* Sw., not endemic.
307. *Asplenium birii* (Å. Löve & D. Löve) Bir, Fras.-Jenk. & Lovis - synonym of *A. magnificum* Ching, not endemic.
308. *Asplenium crinicaule* Hance var. *sikkimense* Bir - synonym of *A. crinicaule* Hance, neither entity is endemic.
309. *Asplenium indicum* Sledge var. *obtusum* Bir (syn.: *A. planicaule* Wall. *ex* Mett., *non* E.J.Lowe, var. *obtusum* Bir) - synonym of *A. yoshinagae* Makino subsp. *indicum* (Sledge) Fras.-Jenk.
310. *Asplenium khasianum* Sledge - apparently endemic, though probably likely to turn up in Myanmar, and perhaps under a different name, in S.W. China.
311. *Asplenium khullarii* Reichst., *ined*. - not endemic.
312. *Asplenium kukkonenii* Reichst. & Viane - not endemic.
313. *Asplenium laciniatum* D.Don var. *acutipinna* Bir - synonym of *A. gueinzianum* Mett. *ex* Kuhn; variety not of taxonomic significance, not endemic.
314. *Asplenium laciniatum* D.Don var. *crinigerum* Bedd. - unidentified taxon, possibly a synonym of *A. rockii* C.Chr., which is not endemic.
315. *Asplenium laciniatum* D.Don var. *subintegrifolium* Hook. (syn.: *A. subintegrifolium* (Hook.) Bir, *comb. inval.*, *non sensu* Bir [= *A. yoshinagae* Makino subsp. *indicum* (Sledge) Fras.-Jenk.]) - synonym of *A. gueinzianum* Mett. *ex* Kuhn, not endemic.
316. *Asplenium nidus* L. var. *acutifolium* Bir - synonym of *A. phyllitidis* D.Don, not endemic. Mistakenly synonymised with *A. nidus* L. by Fraser-Jenkins (1997). *A. nidus* had been widely misreported from much of India in error for *A. phyllitidis*.
317. *Asplenium nitidum* Sw. var. *obtusum* Bedd. - unidentified taxon of uncertain taxonomic significance, but probably a synonym of *A. nitidum* Sw., neither entity is endemic.
318. *Asplenium paucivenosum* (Ching) Bir - not endemic.
319. *Asplenium paucivenosum* (Ching) Bir f. *majus* Bir - synonym of *A. magnificum* (Ching) Bir, Fras.-Jenk. & Lovis, not endemic.

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320. *Asplenium paucivenosum* (Ching) Bir f. *minus* Bir - synonym of *A. paucivenosum* (Ching) Bir, not endemic.
321. *Asplenium punjabense* Bir, Fras.-Jenk. & Lovis - not endemic.
322. *Asplenium tenuicaule* Hayata var. *indopakistanicum* Reichst., *ined*. - not endemic, and a mere spore-ornamentation form of *A. tenuicaule*, not worth taxonomic recognition.
323. *Asplenium unilaterale* Lam. var. *birii* B.K.Nayar & Geev. - synonym of *A. apogamum* N.Murak. & Hatan. (see Fraser-Jenkins, 2008, in press), not endemic.
324. *Asplenium unilaterale* Lam. var. *bivalvatum* B.K.Nayar & Geev. - synonym of *A. excisum* C.Presl, not endemic.
325. *Asplenium unilaterale* Lam. var. *rivale* Bedd. (syn.: *A. rivale* (Bedd.) Bir, *non* Spruce; *A. hindusthanense* ["*hindusthanensis*"] Bir, *nom. inval*., reference for replaced name not given) - synonym of *A. rivulare* Fras.-Jenk. (above); probably endemic (S. India). Fraser-Jenkins (1997) misplaced it within the similar, but thinner-textured *Asplenium filipes* Copel. (syn.: *A. unilaterale* var. *udum* Atk. *ex* Bedd., var. *delicatulum* Parish *ex* Bedd., *A. obliquissimum* (Hayata) Sugim. & Sa.Kurata).

(hybrids) - not meaningful in relation to endemism.
326. *Asplenium anogrammoides* Christ x *Asplenium laciniatum* D.Don - error by Khullar (1994), based on the present author's collection of probable *A.* x *lacei* Reichst. & Viane (*A. laciniatum* x *A. kukkonenii* Reichst. & Viane) from Kulu, Himachal Pradesh. The presence of *A. anogrammoides* in India is very doubtful and it has been reported in error for large and well dissect *A. tenuicaule* Hayata and *A. laciniatum*.
327. *Asplenium* x *dolosum* Milde (*A. adiantum-nigrum* L. x *A. trichomanes* L.) - not endemic, though correct hybrid, reported by Fraser-Jenkins (1992).
328. *Asplenium* x *garhwalense* Reichst. *ex* Khullar, *nom. nud*. (*A. khullarii* Reichst. *ined*. x *A. kukkonenii* Reichst. & Viane) - a spontaneous sterile hybrid.
329. *Asplenium khullarii* Reichst. *ined*. x *A. tenuicaule* Hayata - a spontaneous sterile hybrid.
330. *Asplenium punjabense* Bir, Lovis & Fras.-Jenk. x *A. ceterach* L. - a spontaneous sterile hybrid.

Thelypteris
(*Pronephrium*)
331. *Pronephrium birii* R.D.Dixit & Bal Krishna - synonym of *Thelypteris triphylla* (Sw.) K.Iwats., not endemic. A single abnormally gross collection.
332. *Pronephrium clarkei* Sarn.Singh & Panigrahi - synonym of *Thelypteris nudata* (Roxb.) C.V.Morton, not endemic.
333. *Cyclosorus jerdonii* Ching - synonym of *Thelypteris jerdonii* (Ching) C.F.Reed; both synonyms of *Thelypteris nudata* (Roxb.) C.V.Morton, not endemic.
334. *Pronephrium kumaunicum* P.C.Pande & H.C.Pande - synonym of *Thelypteris penangiana* (Hook.) C.F.Reed, not endemic. It was definitively re-identified as *T. penangiana* by the author for P.C. Pande in *c*. 1995.
335. *Cyclosorus laetestrigosus* (C.B.Clarke) Ching - synonym of *Thelypteris articulata* (Houlston & T.Moore) Panigrahi, not endemic.
336. *Thelypteris lakhimpurensis* (Rosenst.) K.Iwats. - not endemic.
337. *Pronephrium nakaikei* ["*nakaikeium*"] R.D.Dixit & Bal Krishna - a single unidentified collection, perhaps a synonym of *Thelypteris triphylla* (Sw.) K.Iwats., and unlikely to be endemic.
338. *Pneumatopteris nudata* (Roxb.) Punetha & Kholia var. *minor* Punetha & Kholia - synonym of *Thelypteris nudata* (Roxb.) C.V.Morton, not endemic.
339. *Dryopteris rubra* Ching - synonym of *Thelypteris lakhimpurensis* (Rosenst.) K.Iwats., not endemic.
340. *Pronephrium stenopodum* P.Chandra - synonym of *Thelypteris lakhimpurensis* (Rosenst.) K.Iwats., not endemic.

(*Stegnogramma*)
341. *Stegnogramma himalaica* (Ching) K.Iwats. - synonym of *Thelypteris himalaica* (Ching) C.F.Reed, and both synonyms of *T. mollissima* (Fisch. *ex* Kunze) N.Thapa (2002), neither entity is endemic.
342. *Stegnogramma leptogrammoides* K.Iwats. - synonym of *Thelypteris kingii* C.F.Reed; supposedly endemic (to Sikkim), but not accepted here as endemic as it very probably occurs in Tibet and S.W. China *etc*., perhaps under some other name.
(*Pneumatopteris*)
343. *Pneumatopteris truncata* (Poir.) Holttum var. *loyalii* Holttum - synonym of *Thelypteris loyalii* (Holttum) Fras.-Jenk., not endemic.

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(*Cyclogramma*)

344. *Thelypteris khasiensis* Ching - synonym of *Thelypteris squamaestipes* (C.B.Clarke) Ching, not endemic.
345. *Cyclogramma squamaestipes* (C.B.Clarke) Tagawa - synonym of *Thelypteris squamaestipes* (C.B.Clarke) Ching, not endemic.

(*Sphaerostephanos*)

346. *Cyclosorus heterocarpus* (Blume) Ching - synonym of *Thelypteris heterocarpa* (Blume) C.V.Morton, not endemic.
347. *Sphaerostephanos kurzii* Holttum - synonym of *Thelypteris kurzii* (Holttum) Fras.-Jenk. (1997), endemic (Nicobar Islands).
348. *Sphaerostephanos wynadensis* B.K.Nayar & Geev. - synonym of *Thelypteris subtruncata* (Bory) Panigrahi, not endemic.

(*Christella*)

349. *Tectaria artinexa* (C.B.Clarke) Ching - synonym of *Thelypteris clarkei* (Bedd.) C.F.Reed (syn.: *Christella cylindothrix* (Rosenst.) Holttum), not endemic.
350. *Christella clarkei* (Bedd.) Holttum (syn.: *Pleocnemia clarkei* Bedd.; *Tectaria clarkei* (Bedd.) C.Chr.; *Thelypteris cylindothrix* (Rosenst.) K. Iwats.) - synonym of *Thelypteris clarkei* (Bedd.) C.F.Reed, not endemic.
351. *Christella dentata* (Forssk.) Brownsey & Jermy var. *glabra* Punetha & Kholia - synonym of *Thelypteris papilio* (C.Hope) K.Iwats., not endemic.
352. *Christella dentata* (Forssk.) Brownsey & Jermy var. *himalayensis* Punetha & Kholia - synonym of *Thelypteris dentata* (Forssk.) E.St.John, not endemic.
353. *Thelypteris griffithiana* (Fée) Panigrahi [as "*griffithianus*"] - a previously unidentified name from Sri Lanka, not reported from India; synonym of *Thelypteris parasitica* (L.) Tardieu (Fraser-Jenkins, 2008, in press), not endemic.
354. *Cyclosorus holttumii* Sarn.Singh & Panigrahi - synonym of *Thelypteris arida* (D.Don) C.V.Morton, not endemic.
355. *Cyclosorus krameri* Sarn.Singh & Panigrahi - synonym of *Thelypteris subpubescens* (Blume) K.Iwats., not endemic
356. *Cyclosorus mantoniae* Sarn.Singh & Panigrahi - synonym of *Thelypteris crinipes* (Hook.) K.Iwats., not endemic.
357. *Dryopteris maxima* (Haines) Raizada & N.P.Chowdhury - synonym of *Thelypteris arida* (D.Don) C.V.Morton, not endemic.
358. *Christella multiauriculata* Punetha - synonym of *Thelypteris dentata* (Forssk.) E.St.John, not endemic.
359. *Christella namburensis* (Bedd.) Holttum - synonym of *Thelypteris namburensis* (Bedd.) C.F.Reed, apparently endemic (N.E. India), though very likely to occur in Myanmar, and probably also in S.W. China. Holttum's (1976a) records from Thailand were not included by Tagawa & Iwatsuki (1988).
360. *Cyclosorus pseudoacuminatus* Panigrahi & Sarn.Singh - synonym of *Thelypteris siamensis* Tagawa & K.Iwats., not endemic.
361. *Cyclosorus pseudobalansae* Panigrahi & Sarn.Singh - synonym of *Thelypteris arida* (Roxb.) C.V.Morton, not endemic.
362. *Cyclosorus siamensis* (Tagawa & K. Iwats.) Panigrahi var. *khonsaensis* Sarn.Singh. - synonym of *Thelypteris siamensis* Tagawa & K.Iwats., not endemic.
363. *Cyclosorus sledgei* Panigrahi & Sarn.Singh - synonym of *Thelypteris procera* (D.Don) Fras.-Jenk. (2008, in press) (syn.: *Christella appendiculata* (C.Presl) Holttum; *Thelypteris appendiculoides* Fras.-Jenk. (1997)), not endemic.

(*Metathelypteris*)

364. *Metathelypteris decipiens* (C.B.Clarke) Ching - synonym of *Thelypteris decipiens* (C.B.Clarke) Ching, not endemic.
365. *Metathelypteris krameri* Sarn.Singh & Panigrahi - synonym of *Thelypteris flaccida* (Blume) Ching, not endemic.

(*Parathelypteris*)

366. *Thelypteris didymochlaenoides* (C.B.Clarke) Ching (syn.: *Coryphopteris didymochlaenoides* (C.B.Clarke) Holttum *ex* B.K.Nayar & S.Kaur) - apparently endemic (N.E. India), but probably likely to occur in S.W. China and Myanmar.

(*Oreopteris*)

367. *Oreopteris elwesii* (Baker) Holttum - synonym of *Thelypteris elwesii* (Baker) Ching, not endemic.

(*Pseudocyclosorus*)

368. *Pseudocyclosorus canus* "(Baker) Holttum & J.W.Grimes" - error for *Thelypteris cana* (J.Sm.) Ching, not endemic.
369. *Pseudocyclosorus falcilobus* (Hook.) Ching var. *latior* Ching - synonym of *Thelypteris falciloba* (Hook.) Ching, not endemic.

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370. *Pseudocyclosorus gamblei* Holttum & J.W. Grimes - synonym of *Thelypteris gamblei* (Holttum & J.W.Grimes) Fras.-Jenk.; both are synonyms of *Thelypteris tylodes* (Kunze) Ching (syn.: *Thelypteris tuberculifera* (C.Chr.) Ching), not endemic.
371. *Pseudocyclosorus griseus* (Baker) Holttum & J.W.Grimes - synonym of *Thelypteris grisea* (Baker) Ching; both are synonyms of *Thelypteris ochthodes* (Kunze) Ching, not endemic.
372. *Cyclosorus molliusculus* (Kuhn) Ching - synonym of *Thelypteris cana* (J.Sm.) Ching, not endemic. The name *Thelypteris molliuscula* (Kuhn) K.Iwats. has often been misapplied to *T. dentata* (Forssk.) E.St.John.
373. *Pseudocyclosorus ochthodes* (Kunze) Holttum - synonym of *Thelypteris ochthodes* (Kunze) Ching, probably not endemic (may also be in Tibet and China).
374. *Pseudocyclosorus ochthodes* (Kunze) Holttum var. *annamalayensis* Manickam & Irud. - synonym of *Thelypteris ochthodes* (Kunze) Ching, variety not of taxonomic significance; species probably not endemic.
375. *Pseudocyclosorus ochthodes* (Kunze) Holttum var. *palniensis* Manickam & Irud. - synonym of *Thelypteris ochthodes* (Kunze) Ching, variety not of taxonomic significance, species probably not endemic.
376. *Pseudocyclosorus subornatipes* Sarn.Singh & Panigrahi - synonym of *Thelypteris ornatipes* (Holttum & J.W.Grimes) Fras.-Jenk. (1997), not endemic.

(*Trigonospora*)
377. *Trigonospora loyalii* Panigrahi & Sarn.Singh - synonym of *Thelypteris caudipinna* Ching, not endemic.
378. *Trigonospora subcaudipinna* Sarn.Singh & Panigrahi - synonym of *Thelypteris caudipinna* Ching, not endemic.

(*Pseudophegopteris*)
379. *Thelypteris oppositipinna* (Alderw.) Ching - synonym of *Thelypteris rectangularis* (Zoll.) K. Iwats., not endemic.
380. *Pseudophegopteris pyrrhorhachis* (Kunze) Ching var. *glabrata* (C.B.Clarke) Holttum - synonym of *Thelypteris pyrrhorhachis* (Kunze) C.M.Kuo subsp. *laterepens* (E.W.Trotter) Fras.-Jenk. (2008, in press).

(hybrids) - not meaningful in terms of endemism.
381. *Christella kumaunica* Holttum - synonym of *Thelypteris* x *kumaunica* (Holttum) Fras.-Jenk.; a spontaneous sterile hybrid with abortive spores, once collected. Although Fraser-Jenkins (1997) thought the parentage to be *T. arida* (D.Don) C.V.Morton x (doubtfully) *T. jaculosa* (Christ) Panigrahi, it is more likely to be *T. arida* x *T. procera* (D.Don) Fras.-Jenk. (2008, in press) [syn.: *T. appendiculoides* Fras.-Jenk. (1997)], which hybrid the present author has also found between Deurali and Gopling Ghat, Gorkha Dist., W.C. Nepal (*CRFJ* 25110, Field no. 1089, 30 Dec. 1996).

382. *Thelypteris* x *gogoi* Fras.-Jenk. (*T. triphylla* (Sw.) K.Iwats. x *T. procera* (D.Don) Fras.-Jenk.) - a spontaneous sterile hybrid.

Athyrium
383. *Athyrium andersonii* (C.B.Clarke) Panigrahi & S.K.Basu - synonym of *A. atkinsonii* Bedd., not endemic.
384. *Athyrium atratum* Bedd. – not endemic.
385. *Athyrium brevisorum* Bedd. - synonym of *A. niponicum* (Mett.) Hance, not endemic.
386. *Dryopteris brunoniana* (Wall. *ex* Mett.) Kuntze - synonym of *Athyrium wallichianum* Ching, not endemic.
387. *Athyrium caudipinna* Ching - synonym of *A. mackinnoniorum* (C.Hope) C.Chr., not endemic.
388. *Athyrium dentigerum* (C.B.Clarke) Mehra & Bir - synonym of *A. attenuatum* (C.B.Clarke) Tagawa, not endemic.
389. *Athyrium duthiei* (Bedd.) Bedd. - synonym of *A. davidii* (Franch.) Christ (see Fraser-Jenkins, 1984, 1997), not endemic.
390. *Athyrium filix-femina* (L.) Roth. forma *intermedium* Mehra & Khullar *ex* Fras.-Jenk. & Khullar (syn.: *A. attenuatum* (C.B.Clarke) Tagawa forma *intermedia* Fras.-Jenk. & Khullar) - synonym of *A. attenuatum* (C.B.Clarke) Tagawa, not endemic; forma not of taxonomic significance.
391. *Athyrium himalaicum* Ching *ex* Mehra & Bir - not endemic.
392. *Athyrium* x *keralense* ["*keralensis*"] Manickam & Irudayaraj - not hybrid, synonym of *A. falcatum* Bedd., not endemic.
393. *Athyrium kumaonicum* Punetha - possible endemic (W. Himalaya), though further study is required.
394. *Athyrium mehrae* Bir - synonym of *A. nephrodioides* (Baker) Christ, not endemic. Fraser-Jenkins (1997) eroneously equated the type of *A. mehrae* with *A. rupicola* (Edgew. *ex* C.Hope) C.Chr., due to confusion as to which frond is the holotype.

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395. *Athyrium nigripes* (Blume) T.Moore var. *stramineum* T.Moore [error for *A. tenuifrons* T.Moore *ex* Sim var. *stramineum* J.Sm. *ex* T.Moore, *nom. nud.*] - synonym of *A. devolii* Ching, not endemic.
396. *Athyrium parasnathense* (C.B.Clarke) Ching *ex* Bir - endemic (S. and C. India).
397. *Athyrium proliferum* T.Moore - synonym of *A. strigillosum* (T.Moore *ex* E.J.Lowe) T.Moore *ex* Salomon, not endemic.
398. *Athyrium pseudofilix-femina* Ching - synonym of *A. attenuatum* (C.B.Clarke) Tagwawa, not endemic. Bir separated *A. attenuatum* from its synonym, *A. dentigerum*, as his earlier sense of *A. attenuatum* was actually *A. rupicola* and *A. nephrodioides.*
399. *Athyrium rupicola* (C.Hope) C.Chr. - not endemic.
400. *Athyrium rubricaule* (C.B.Clarke) Bir - not endemic.
401. *Athyrium sikkimense* Ching - synonym of *A. distans* (D.Don) T.Moore, not endemic.
402. *Athyrium solenopteris* (Kunze) T.Moore var. *pusillum* (Kunze) T.Moore - synonym of *A. gymnogrammoides* (Klotzsch *ex* Mett.) Bedd., not endemic. *A. solenopteris* is replaced in the (E.) Himalaya by *A. devolii* Ching.
403. *Athyrium subtriangulare* (Hook.) Bedd. var. *sikkimense* Bir (syn.: *A. sikkimense* (Bir) Å.Löve & D.Löve, *non* Ching; *Pseudocystopteris sikkimensis* (Bir) Ching) - synonym of *A. spinulosum* (Maxim.) Milde, not endemic.
404. *Athyrium pectinatum* (Wall. *ex* Mett.) T.Moore var. *tenellum* Bedd. - synonym of *A. parasnathense* (C.B.Clarke) Ching *ex* Bir, endemic (S. & C. India).
405. *Athyrium tenellum* (T.Moore *ex* R.Sim) Hope, *non* Roxb., *nec* Fée - synonym of *Athyrium setiferum* C.Chr., not endemic.
406. *Araiostegia yaklaensis* (Bedd.) Nayar & Kaur - synonym of *A. yaklaense* (Bedd.) Panigrahi & S.K.Basu; both are synonyms of *A. fimbriatum* T.Moore, not endemic, as is *Athyrium andersonii* (C.B.Clarke) Panigrahi & S.K.Basu, which was erroneously said to be the correct name by Nooteboom (1992), see Fraser-Jenkins (1997).

Cystopteris

407. *Cystopteris fragilis* (L.) Bernh. f. *granulosa* Bir & Trikha - synonym of *C. fragilis* (L.) Bernh. subsp. *dickieana* (R.Sim) Hyl., not endemic.
408. *Cystopteris fragilis* (L.) Bernh. f. *himalayensis* Bir & Trikha - synonym of *C. fragilis* (L.) Bernh. subsp. *fragilis*, not endemic.
409. *Cystopteris sikkimensis* Ching *ex* Bir - synonym of *C. fragilis* (L.) Bernh. subsp. *dickieana* (R.Sim) Hyl., not endemic.

Deparia

410. *Dryoathyrium chingii* Sarn.Singh & Panigrahi - synonym of *Deparia boryana* (Willd.) M.Kato, not endemic.

Cornopteris

411. *Cornopteris birii* Ching *ex* Bir - synonym of *C. decurrentialata* (Hook.) Nakai, not endemic (see Fraser-Jenkins, 1997).

Diplazium

412. *Diplazium apicisorum* Panigrahi & Sarn.Singh (syn.: *Asplenium multicaudatum* var. *caudiceum* ["*caudicea*"] Baker & C.B.Clarke; misapplied name: *Diplazium griffithii sensu* Baker, Bedd., Singh & Panigrahi, *non* T.Moore). *D. apicisorum* is not endemic to India. It is not clear whether it has been named previously from China, where it has not been properly recognised; but it might perhaps be a synonym of *Diplazium pseudosetigerum* (Christ) Fras.-Jenk., as illustrated by Chu (1999) in the *Flora Reipublicae Popularis Sinicae.*
413. *Diplazium bellum* (C.B.Clarke) Bir - not endemic.
414. *Diplazium chittagongense* Sarn.Singh & Panigrahi - synonym of *D. chattagramicum* (C.B.Clarke) Ching, not endemic and very close to *D. beddomei* C.Chr.
415. *Diplazium cuneipinnulum* Panigrahi & Sarn.Singh - synonym of *D. dilatatum* Blume, not endemic.
416. *Diplazium* "*esculentum* (C.B.Clarke) C.Chr.", error for *D. succulentum* (C.B.Clarke) C.Chr. - not endemic (not *D. esculentum* (Retz.) Sw.).
417. *Diplazium himalayense* (Ching) Panigrahi - not endemic.
418. *Diplazium josephii* Sarn.Singh - synonym of *D. crinitum* (Baker) C.Chr., not endemic (see Fraser-Jenkins 1997).
419. *Diplazium lobulosum* (Wall. *ex* Mett.) C.Presl *ex* C.Chr. - synonym of *D. longifolium* T.Moore (see Morton 1974), not endemic.
420. *Diplazium miaoense* Sarn.Singh & Panigrahi - synonym of *D. dilatatum* Blume, not endemic. A small, precociously fertile plant.
421. *Diplazium namdaphaense* Sarn.Singh & Panigrahi - synonym of *D. dilatatum* Blume, not endemic.
422. *Diplazium nanolobum* Sarn.Singh & Panigrahi - synonym of *D. dilatatum* Blume, not endemic.

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423. *Diplazium paleaceum* Sarn.Singh & Panigrahi var. *paleaceum* - synonym of *D. crinitum* (Baker) C.Chr., not endemic.
424. *Diplazium paleaceum* Sarn. Singh & Panigrahi var. *spiniperisporeum* Sarn.Singh & Panigrahi - synonym of *D. crinitum* (Baker) C.Chr., not endemic.
425. *Diplazium panigrahianum* Sarn.Singh - synonym of *D. doederleinii* (Luerss.) Makino, which occurs from E. Nepal and throughout N.E. India to China and Taiwan, not endemic.
426. *Diplazium pinnatifidopinnatum* (Hook.) T.Moore - not endemic.
427. *Diplazium pseudocrinipes* Panigrahi & Sarn.Singh - synonym of *D. forrestii* (Ching) Fras.-Jenk. (2008, in press), with most scales lost, not endemic.
428. *Diplazium sarojiniae* Sarn.Singh - synonym of *D. dilatatum* Blume, not endemic.
429. *Diplazium singhii* Panigrahi - synonym of *D. dilatatum* Blume, not endemic; a small precociously fertile specimen, as occurs in this species.
430. *Diplazium sikkimense* (C.B.Clarke) C.Chr. - not endemic.
431. *Diplazium stoliczkae* Bedd. - not endemic.
432. *Diplazium subdoederleinii* Sarn.Singh & Panigrahi - synonym of *D. doederleinii* (Luerss.) Makino, not endemic.
433. *Diplazium succulentum* (C.B.Clarke) C.Chr. - not endemic.
434. *Diplazium tirapense* Panigrahi & Sarn.Singh - synonym of *D. dilatatum* Blume, not endemic; a small precociously fertile specimen.
435. *Diplazium travancoricum* Bedd. - not endemic.
436. *Athyrium umbrosum* (Aiton) C.Presl - synonym of *Diplazium caudatum* (Cav.) Jermy, from Macaronesia; absent from India so not endemic there. The name *Diplazium umbrosum* (Aiton) Bedd. has been misapplied in India to *Diplazium kawakamii* Hayata ("*D. muricatum*" *auct. bor. Ind.*, non (Mett.) Alderw.) and to *D. spectabile* (Wall. *ex* Mett.) Ching (syn.: *Diplazium multicaudatum* (Wall. *ex* C.B.Clarke) Mehra), which are not endemic.

(hybrids) - not meaningful in terms of endemism.
437. *Diplazium* x *kashmirianum* Fras.-Jenk. (*D. maximum* (D.Don) C.Chr. x *D. laxifrons* Rosenst.) - spontaneous sterile hybrid.
438. *Diplazium frondosum* (Wall. *ex* C.B.Clarke) Christ x *Diplazium sikkimense* (C.B. Clarke) C. Chr. [error for *Diplazium maximum* (D. Don) C. Chr. x *D. sikkimense*; *i.e. Diplazium* x *neobirii* Fras.-Jenk. (2008, in press)] - spontaneous sterile hybrid.

Woodsia
439. *Woodsia cycloloba* Hand.-Mazz. - not endemic.

Tectaria
440. *Tectaria dubia* (C.B.Clarke & Baker) Ching - not endemic.
441. *Tectaria khonsaensis* Sarn.Singh & Panigrahi - synonym of *T. polymorpha* (Wall. *ex* Hook.) Copel., not endemic. Not conspecific with Clarke's correctly cited specimen of *T. wightii* (C.B.Clarke) Ching, from Bhutan, as stated by Panigrahi.
442. *Tectaria mehrae* Panigrahi & Sarn.Singh - synonym of *T. griffithii* (Baker) C.Chr., not endemic.
443. *Tectaria periya* B.K.Nayar & Geev. - synonym of *T. coadunata* (Wall. *ex* Hook. & Grev.) C.Chr.; Geevarghese's concept of "*T. coadunata*" was cultivated *T. gemmifera* (Fée) Alston from Africa.
444. *Tectaria polymorpha* (Wall. *ex* Hook.) Copel. var. *macrocarpa* (Bedd.) S.Chandra & S.Kaur (syn.: *T. macrocarpa* (Bedd.) B.K.Nayar & Geev.; *T. herpetocaulos* Holttum) - synonym of *T. wightii* (C.B.Clarke) Ching.
445. *Tectaria subconfluens* (Bedd.) Ching - apparently endemic, but probably likely to occur in S.W. China and Myanmar as well.

Ctenitis
446. *Ctenitis holttumii* Sarn.Singh & Panigrahi - synonym of *Ctenitis subglandulosa* (Hance) Ching, not endemic.

Dryopsis
447. *Dryopteris clarkei* (Baker) Kuntze - synonym of *Dryopsis clarkei* (Baker) Holttum & P.J.Edwards, not endemic.
448. *Ctenitis ferruginea* (Bedd.) Ching - synonym of *Dryopsis ferruginea* (Bedd.) Holttum & P.J.Edwards, not endemic.
449. *Ctenitis nidus* (Baker) Ching - synonym of *Dryopsis nidus* (Baker) Holttum & P.J.Edwards, not endemic.
450. *Ctenitis scabrosa* (Kunze) Ching - synonym of *Dryopsis scabrosa* (Kunze) Holttum & P.J. Edwards; endemic (S. India).

Dryopteris
451. *Dryopteris assamensis* (C.Hope) C.Chr. & Ching - not endemic.

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452. *Dryopteris austroindica* Fras.-Jenk. - endemic (S. India).
453. *Dryopteris basiaurita* Ching - synomym of *D. dickinsii* (Franch. & Sav.) C.Chr., not endemic.
454. *Dryopteris blanfordii* (C.Hope) C.Chr. subsp. *blanfordii* - not endemic; subsp. *nigrosquamosa* (Ching) Fras.-Jenk., occurring from Bhutan and Tibet to S.W. China, is again not endemic to India.
455. *Dryopteris chingii* N.C.Nair - synonym of *D. xanthomelas* (Christ) C.Chr. (syn.: *D. pulcherrima* Ching), not endemic.
456. *Dryopteris darjeelingensis* Fras.-Jenk. - synonym of *D. gamblei* (C.Hope) C.Chr., not endemic (see Fraser-Jenkins, 1997).
457. *Dryopteris* x *flemingii* Fras.-Jenk. - a species, *D. flemingii* Fras.-Jenk., *pro hybr*., not endemic.
458. *Dryopteris gamblei* (C.Hope) C.Chr. - not endemic.
459. *Dryopteris harae* H.Itô - synonym of *D. pulvinulifera* (Bedd.) Kuntze, not endemic.
460. *Dryopteris khullarii* Fras-Jenk. - endemic (W.Himalaya).
461. *Dryopteris lachoongensis* (Bedd.) B.K.Nayar & S.Kaur - very doubtful if distinct from *D. fructuosa* (Christ) C.Chr., neither is endemic (see Widén, Fraser-Jenkins, Reichstein & Sarvela, 1999).
462. *Dryopteris pulvinulifera* (Bedd.) Kuntze - not endemic.
463. *Dryopteris ramosa* (C.Hope) C.Chr. - not endemic.
464. *Dryopteris redactopinnata* S.K.Basu & Panigrahi - not endemic.
465. *Dryopteris sikkimensis* (Bedd.) Kuntze - not endemic.
466. *Dryopteris sinofibrillosa* Ching - synonym of *D. xanthomelas* (Christ) C.Chr. (syn.: *D. pulcherrima* Ching), not endemic.
467. *Dryopteris subimpressa* Loyal - not endemic.
468. *Dryopteris submarginata* Loyal, *non* Rosenst. - synonym of *D. subimpressa* Loyal, not endemic.
469. *Dryopteris subtriangularis* (C.Hope) C.Chr. - not endemic.

(hybrids) - not meaningful in terms of endemism.
470. *Dryopteris* x *ghatakii* Fras.-Jenk. - spontaneous sterile hybrid.
471. *Dryopteris* x *liddarensis* Fras.-Jenk. - spontaneous sterile hybrid.
472. *Dryopteris* x *loyalii* Fras.-Jenk. - spontaneous sterile hybrid.
473. *Dryopteris* x *macdonellii* Fras.-Jenk. - spontaneous sterile hybrid.
474. *Dryopteris sparsa* (D.Don) Kuntze (2x) x *Dryopteris sparsa* (D.Don) Kuntze (4x), listed by Fraser-Jenkins (1989) - spontaneous sterile hybrid.
475. *Dryopteris* x *vidyae* Fras.-Jenk. - spontaneous sterile hybrid.
476. *Dryopteris* x *wechteriana* Fras.-Jenk. - spontaneous sterile hybrid.
477. *Dryopteris* x *zygoparentalis* Fras.-Jenk. - spontaneous sterile hybrid.

Arachniodes
478. *Arachniodes speciosa* (D.Don) Ching - not endemic.

Polystichum
479. *Polystichum castaneum* (C.B.Clarke) Ching - synonym of *P. prescottianum* (Wall. *ex* Mett.) T.Moore, a minor variant of little taxonomic significance, with intermediates, neither form is endemic.
480. *Polystichum garhwalicum* N.C.Nair & Nag - synonym of *P. neolobatum* Nakai, not endemic.
481. *Dryopteris gracilis* (T.Moore *ex* Bedd.) Ching - synonym of *Polystichum thomsonii* (Hook.f.) Bedd., not endemic.
482. *Polystichum heteropaleaceum* N.C.Nair & Nag - synonym of *P. mucronifolium* (Blume) C.Presl, not endemic.
483. *Polystichum indicum* Khullar & S.C.Gupta, *nom. nud*. - synonym of *P. discretum* (D.Don) Diels, not endemic.
484. *Polystichum kunthianum* B.K. Nayar & Geev. - synonym of *P. subinerme* (Kunze) Fras.-Jenk., endemic (S. India). Misapplied by Fraser-Jenkins (1991) to *P. palniense* Fras.-Jenk. (see below).
485. *Polystichum lentum* (D.Don) T.Moore - not endemic.
486. *Polystichum lentum* (D.Don) T.Moore var. *bifurcatum* A.Biswas & S.K.Basu - synonym of *P. lentum* (D.Don) T.Moore, not endemic; a slightly abnormal plant.
487. *Polystichum longipinnulum* N.C.Nair - synonym of *P. semifertile* (Hook.) Ching, not endemic.
488. *Polystichum mehrae* Fras.-Jenk. & Khullar - not endemic.
489. *Polystichum mucronifolium* (Blume) C.Presl - not endemic.
490. *Polystichum palniense* Fras.-Jenk. (2008, in press) - endemic (S. India), related to but distinct from *P. moluccense* (Blume) T.Moore from S.E. Asia.
491. *Polystichum panigrahianum* Sarn.Singh - synonym of *P. lentum* (D.Don) T.Moore, not endemic.

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492. *Polystichum polyodon* Wall. *ex* Ching - endemic (N.E. India), as currently known, though probably likely to be present in Myanmar and S.W. China.
493. *Polystichum semifertile* (C.B.Clarke) Ching - not endemic.
494. *Polystichum setiferum* (C.B.Clarke) Ching - error for *P. piceopaleaceum* Tagawa. *P. setiferum* (Forssk.) Woyn. is not present in India, so not endemic.
495. *Polystichum setiferum* (Forssk.) Woyn. var. *crenatum* N.C.Nair - synonym of *P. discretum* (D.Don) Diels, not endemic.
496. *Polystichum subinerme* (Kunze) Fras.-Jenk. - endemic (S. India).
497. *Polystichum sublentum* Sarn.Singh & Panigrahi - synonym of *P. lentum* (D.Don) T.Moore, not endemic.
498. *Lastreopsis wattii* (Bedd.) Tagawa - synonym of *Polystichum wattii* (Bedd.) C.Chr., not endemic.

(hybrids) - not meaningful in terms of endemism.
499. *Polystichum* x *flemingii* Fras.-Jenk. (*P. discretum* (D.Don) J.Sm. x *P. yunnanense* Christ) - spontaneous sterile hybrid, also known outside India.
500. *Polystichum* x *inayatii* Fras.-Jenk. (*P. piceopaleaceum* Tagawa x *P. yunnanense* Christ) - spontaneous sterile hybrid, also known outiside India.
501. *Polystichum* x *jamunae* Fras.-Jenk. (*P. mehrae* Fras.-Jenk. & Khullar x *P. squarrosum* (D.Don) Fée) - spontaneous sterile hybrid.

Lomagramma
502. *Bolbitis nagalandensis* R.R.Rao & Jamir - probable synonym of *Lomagramma sorbifolia* (Willd.) Ching, not endemic (but type not seen).

Bolbitis
503. *Bolbitis appendiculata* (Willd.) K.Iwats. var. *kummatta* B.K.Nayar & Geev. - synonym of *B. appendiculata* (Willd.) K.Iwats., not endemic.
504. *Egonolfia appendiculata* (Willd.) J.Sm. var. *major* (Bedd.) B.K.Nayar & S.Kaur - synonym of *Bolbitis major* (Bedd.) Hennipman, not endemic.
505. *Egonolfia keralensis* B.K.Nayar & S.Kaur - synonym of *Bolbitis appendiculata* (Willd.) K.Iwats., not endemic.
506. *Bolbitis* x *ponmudiensis* Manickam & Irud., *nom. inval*., the single herbarium for holotype not indicated - synonym of *B. angustipinna* (Hayata) H.Itô, not endemic.
507. *Bolbitis presliana* (Fée) Ching - endemic (S. India).
508. *Bolbitis semicordata* (Baker) Ching - endemic (S. India).
509. *Bolbitis subcrenata* (Hook. & Grev.) Ching var. *prolifera* (Hook.) Hennipman - synonym of *B. subcrenatoides* Fras.-Jenk. (2008, in press) (syn.: *Acrostichum proliferum* Hook., *non* Blume); endemic (S. India).
510. *Bolbitis thommankuthiana* S.Nampy - unidentified, juvenile, precociously fertile plant, synonym of *B. semicordata* (Baker) Ching, not endemic.

(hybrids) - not meaningful in terms of endemism.
511. *Bolbitis* x *lancea* (Copel.) Ching (*B. angustipinna* (Hayata) H.Itô x *B. subcrenata* (Hook. & Grev.) Ching) - spores abortive; spontaneous hybrid.
512. *Bolbitis* x *prolifera* (Bory) C.Chr. & Tardieu (*B. angustipinna* (Hayata) H.Itô x *B. semicordata* (Baker) Ching) - spores abortive; spontaneous hybrid (many records are erroneous and refer to *B. semicordata* (Baker) Ching with sub-pinnate, attenuated frond-apices and good spores).

Elaphoglossum
513. *Elaphoglossum beddomei* Sledge - endemic (S. India).
514. *Elaphoglossum cherrapunjii* S.R.Ghosh & A.Biswas - synonym of *E. marginatum* (Wall. *ex* Fée) T.Moore, not endemic.
515. *Elaphoglossum fasciculatum* A.Biswas & S.R.Ghosh - synonym of *E. marginatum* (Wall. *ex* Fée) T.Moore, not endemic.
516. *Elaphoglossum himalaicum* ["*himalaycum*"] K.Biswas *ex* A.Biswas & S.R.Ghosh - synonym of *E. marginatum* (Wall. *ex* Fée) T.Moore, not endemic.
517. *Elaphoglossum indicum* A.Biswas & S.R.Ghosh - synonym of *E. marginatum* (Wall. *ex* Fée) T.Moore, not endemic.
518. *Elaphoglossum jowaiense* A.Biswas & S.R.Ghosh - synonym of *E. marginatum* (Wall. *ex* Fée) T.Moore, not endemic.
519. *Elaphoglossum khasianum* A.Biswas & S.R.Ghosh - synonym of *E. stelligerum* (Wall. *ex* Baker) T.Moore *ex* Salom., not endemic.
520. *Elaphoglossum nilgiricum* Krajina *ex* Sledge - endemic (S. India).
521. *Elaphoglossum pangteyi* Khullar & Samant - synonym of *E. marginatum* (Wall. *ex* Fée) T.Moore, not endemic.

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522. *Elaphoglossum prainii* S.R.Ghosh & A.Biswas - synonym of *E. marginatum* (Wall. *ex* Fée) T.Moore, not endemic.
523. *Elaphoglossum simonsianum* S.R.Ghosh & A.Biswas - synonym of *E. marginatum* (Wall. *ex* Fée) T.Moore, not endemic.
524. *Elaphoglossum stigmatolepis* (Fée) T.Moore - endemic (S. India).
525. *Elaphoglossum thomsonii* S.R.Ghosh & A.Biswas - synonym of *E. marginatum* (Wall. *ex* Fée) T.Moore, not endemic.

Araiostegia

526. *Araiostegia beddomei* (C.Hope) Ching - not endemic. Misplaced as a synonym of *A. pulchra* (D.Don) Copel. by Nooteboom (1992, 1994).
527. *Araiostegia hopei* Panigrahi & S.K.Basu - synonym of *A. hookeri* (T.Moore *ex* Bedd.) Ching, not endemic.
528. *Araiostegia pseudocystopteris* (Kunze) Copel. - synonym of *A. pulchra* (D.Don) Copel., neither entity is endemic.

Davallia

529. *Araiostegia multidentata* (Wall. *ex* Hook.) Copel. - synonym of *Davallia multidentata* Wall. *ex* Hook. (syn.: *Paradavallodes multidentata* (Wall. *ex* Hook.) Ching), not endemic.

Blechnum

530. *Blechnum orientale* L. var. *grande* ["*grandis*"] B.K.Nayar & Geev. - synonym of *Blechnum orientale* L., a normal large sized individual, not endemic.

CONCLUSION

It has become apparent that one of the main obstructions to understanding the Indian Pteridophytic flora accurately concerns the large number of local papers presented to the editors of various Indian journals (especially the *Indian Fern Journal*, *Journal of Economic and Taxonomic Botany*, *Journal of the Bombay Natural History Society*, *Bulletin of the Botanical Survey of India*, the books and publications of the BSI, and the *Journal of Indian Botany etc*.) containing erroneous new taxa. For the avoidance of some of the problems that have arisen it is to be hoped that editors of journals may be able to apply more critical and far-reaching standards of editing of papers. This especially applies to those containing new taxa, or contradicting some of the more authoritative international monographic studies, but apparently written in isolation without knowledge of newer modern works concerning adjacent floras. Many of the problems arise from insufficent knowledge of the adjacent floras, while others arise due to the prevalence of describing new species with insufficient knowledge of the genus concerned in India *etc*. Many more are the result of inability to recognise and identify what are often only single collections leading to hasty desciption of a "new species" for career enhancement purposes.

The spurious publication of some 483 mistaken endemic species is a unique phenomenon internationally, which has arisen from these problems. While the Chinese Pteridophyte flora awaits proper reassessment and revision, beyond the current *Flora Reipublicae Popularis Sinicae*, it is admittedly difficult to understand the ranges of species there that are often split up under several different names. The other major area of difficulty concerns the S.E. Asian Fern flora – some of which has been clarified in the few Pteridophyte parts of *Flora Malesiana* that have appeared so far. This region is far more complex and contains a far greater number of species than in the Indian subcontinent. However, particularly for S. India, Sri Lanka, N.E. India and the Andaman and Nicobar Isands, it appears that a working knowledge of the S.E. Asian fern flora may be required as a number of potential new taxa from the South *etc*. appear to be identical to or closely related to those from S.E. Asia.

For future taxonomic revision of dubious taxa, there is still a pressing need for character-based cyto-taxonomic study of critical groups and genera, but to do so requires a level of experience, detailed wide-based research and taxonomic competence which has become more and more lacking in hastily produced modern local publications.

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印度蕨類植物特有種以及假特有種在分布格局中的關係

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摘　　要

近幾十年來，約有 530 種蕨類植物被發表為印度特有種（約占已知印度蕨類總數 950-1000 種的一半），特別是源自於印度－喜馬拉雅地區的種類，有極大的數量是錯誤的。本研究確認的印度特有種數量僅為 47 種，低於前人發表數量的 10%。但這個數目仍包含數個不確定的特有種：主要肇因於部份種類仍有分類上的疑異尚未解決，或是可能出現在其他鄰近國家。例如，其中有 8 種為具分類爭議的種類，需要更進一步的研究；有 7 種分布於印度東北方的種類可能出現在印度境外的其他地區。由於當初被認定為地區性特有的新種而錯誤命名，或是缺乏這些種類在印度境外的分布範圍，以及不充分的分類研究，導致了約 483 種印度假特有種的誤謬。

本研究逐一重新評估過去被認為的特有種，並提列在此承認的印度特有種新名單。與前人的結論截然相反：印度特有的蕨類植物主要分布於印度半島至南印度（27 種，以及具有分類爭議的 5 種），少數特有種分布於印度東北方（7 種，全都可能分布於印度境外）、喜馬拉雅西部（2 種，以及 1 種具分類爭議）、馬來西亞植物區系的尼科巴群島（3 種，以及具分類爭議的 2 種）。根據這些數據僅可以推論兩座山脈不能阻絕印度東北部與西藏、中國，或緬甸植物相的連結，這個地區是與中國－喜馬拉雅以及東南亞植物相緊密相連的一部分。相對來說印度南方自古以來便是一個較為獨立的地理區塊，並具備部分的馬來西亞蕨類植物相。本研究亦提供印度特有種與植物地理區系元素關聯的一些細節。

印度特有種：石杉屬 1 種，卷柏屬 9 種，水韭屬 1 種，紫萁屬 1 種，肢節蕨屬 1 種，擬茀蕨屬 1 種，山禾葉蕨屬（*Oreogrammitis*）2 種，假脈蕨屬 1 種，鳳尾蕨屬 1 種，杪欏屬 3 種，鱗始蕨屬 3 種，鐵角蕨屬 3 種，金星蕨屬 3 種，蹄蓋蕨屬 2 種，三叉蕨屬 1 種，擬鱗毛蕨屬 1 種，鱗毛蕨屬 1 種，耳蕨屬 4 種，實蕨屬 3 種，舌蕨屬 3 種。

關鍵詞：印度、蕨類植物、特有種、植物地理學、假特有種。

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