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# TYPE MATERIAL OF GRASSES IN SOME RUSSIAN HERBARIA<sup>1</sup>

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#### ABSTRACT

In the year 1969, the author had the opportunity of working in several herbaria of U.S.S.R. He examined the type material of the family Poaceae deposited in all those herbaria. The paper gives an account of those type specimens which relate to the grass species occurring in India, and whose duplicate sheets have not, so far, been located in any Indian herbarium. About 100 type specimens belonging to 40 genera and 82 species are described.

### INTRODUCTION

The author had the opportunity of visiting the U. S. S. R. during April to October 1969, under the Scientific and Cultural Exchange Programme of the

Government of India and the Academy of Sciences of U. S. S. R. He worked mainly in the herbarium of the Komarov Botanical Institute of the Academy of Sciences of U. S. S. R. at Leningrad, which is the largest herbarium of U. S. S. R. and is one of the largest of the world. It is very rich in Indian material.

He also visited the herbaria at Moscow (in Russian Republic), Tashkent (in Uzbekistan Republic), Dushanbe (in Tajikistan Republic), Tbilisi and Batumy (in Georgian Republic), Yalta and Kiev

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(in Ukrainian Republic) and Novosibirsk (in Siberian Republic).

In addition to other material in these herbaria, he studied the type material of

to the grass species occurring in India.

For a proper revision of the flora of India, monographers of genera and families have often to refer to the type

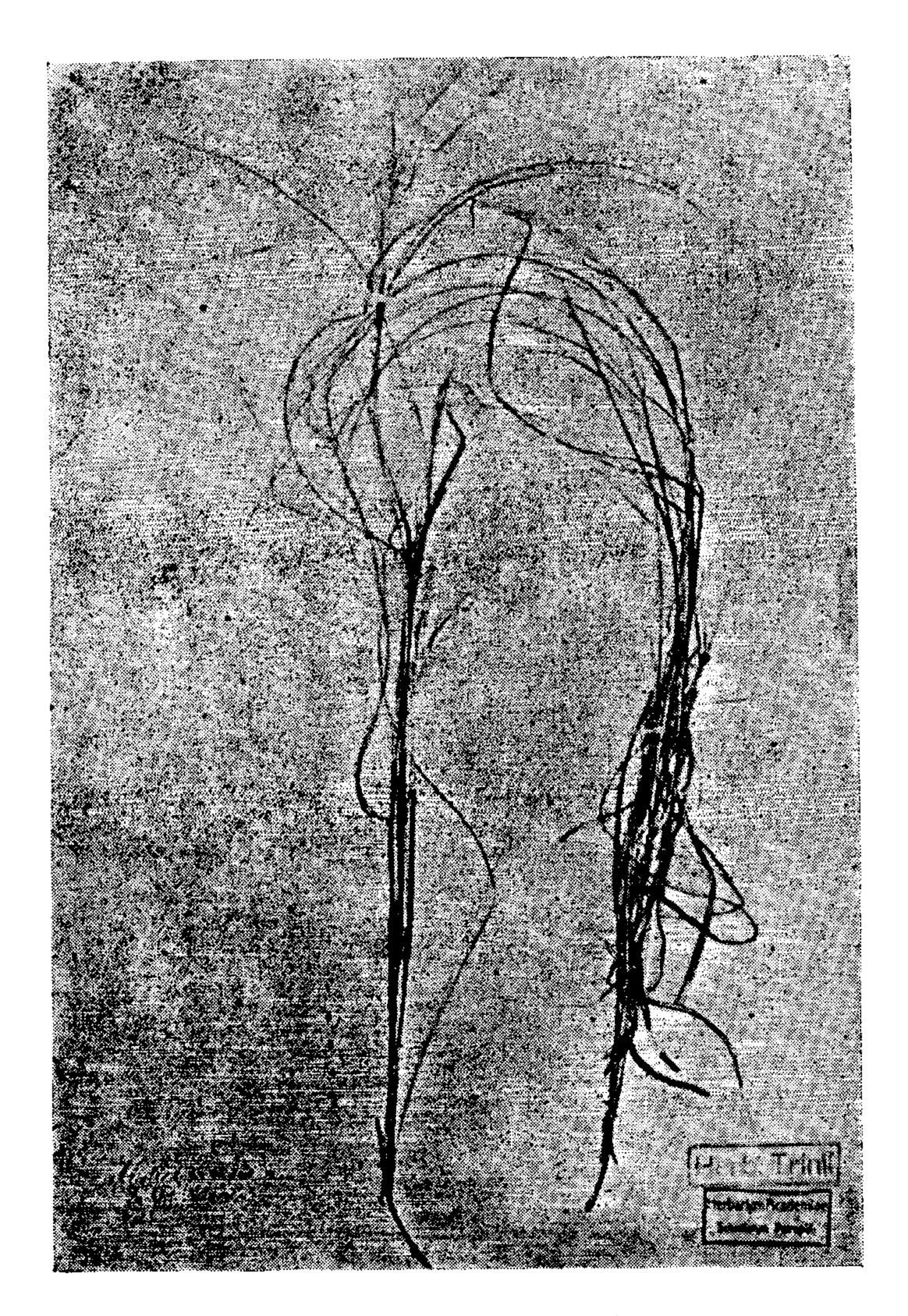


Fig. 1. Aristida pennata Trin.

Poaceae, particularly those types or authentic sheets\*, which had a relevance

specimens. Before they can do so, they have to know in which herbaria of India (or of the world), the types of those taxa are deposited. Workers in India usually turn to the Kew herbarium for such material or information. The Kew herbarium

Authentic Sheet: A term applied to such, specimens which, on the basis of some data or not be designated to be type material, but, can not be designated so with certainty, for want of literature, or for some other reason.

is, no doubt, unique in such collections; but, there are many other herbaria in the world which have types and other valuable specimens relevant to the flora of India. Information on such specimens from any herbarium of the world is, therefore, useful for taxonomists, and phytogeographers; even for authors of history of botany.

For the benefit of workers on Poaceae, an account is given here of some of the type material of this family available in U. S. S. R. herbaria.

## Indian Collections and New Taxa

A large number of middle and late nineteenth century collections from India, such as those of J. F. Royle and J. F. Duthie from northwestern India, N. Wallich from Nepal, R. Wight from Indian Peninsula, J. D. Hooker and T. Thomson and C. B. Clarke from eastern India, and R. F. Hohenacker and F. Metz from Nilgiris had reached different herbaria in U. S. S. R., chiefly the herbarium in Leningrad. A very rich collection of Indian specimens was seen by the author in the herbarium of the Botanical Institute of the Ukrainian Academy of Sciences at Kiev. This collection has not been studied in recent years; the bundles are kept more or less as they were originally received, and in its present condition, the author could not make much use of the material. However, since this collection comprises, among others, gatherings of N. Wallich, W. Griffith, R. Wight, B. Heyne, and J. D. Hooker and T. Thomson, it must be having duplicates of many type specimens. A more detailed account of this collection has been given elsewhere (Jain 1971b).

The Indian collections in U.S.S.R.

herbaria had yielded many new species; , and not unoften, the Russian botanists were the very first to describe new taxa from Indian materials. Anybody working on grasses in the Leningrad herbarium will be impressed by the rich contribution of the well known Russian agrostologist C. B. Trinius. Fortunately, his herbarium (Herb. Trinii, Photo 1 and 2) has, so far, been kept in a separate section in the Leningrad herbarium; this facilitates reference and study. It will be seen that the majority of the type specimens discussed in this paper belong to the new taxa founded by Trinius, and thus, sheets bearing annotations by Trininus himself abound in the Leningrad herbarium.

Also, several new species and varieties, which were described by workers in U.S. S. R. or others from regions outside India, were later found to occur in India also. Instances of this kind have been found in the collections of R. F. Hohenacker from Persia, G. H. K. Thwaites from Ceylon, Stolizka from Tibet and Lahul, H. A. Schlagintweit from High Asia, A. F. W. Schimper from Abyssinia, Wilhems from Caucasus, A Chamisso from Manilla in Philippines, N. S. Turczaninow from Baikal, A. A. Bunge from Altai mountains, and A. J. Szovits from Adjerbaijan and Armenia, etc. The type material of many such taxa is available in Leningrad or other Russian herbaria.

#### Type Specimens

A comparison of the information gathered in different Russian herbaria with the lists of type material available in Indian herbaria showed that the duplicates of many of those type specimens are not present in Indian herbaria. Dupli-

cates of some type specimens were not available even in Kew. The type material in U. S. S. R. herbaria, is, therefore, valuable for taxonomic work in India.

are not isolated or kept separate, and a search through the entire material was not always possible. Also, there must necessarily be many unlabelled, i.e. so far

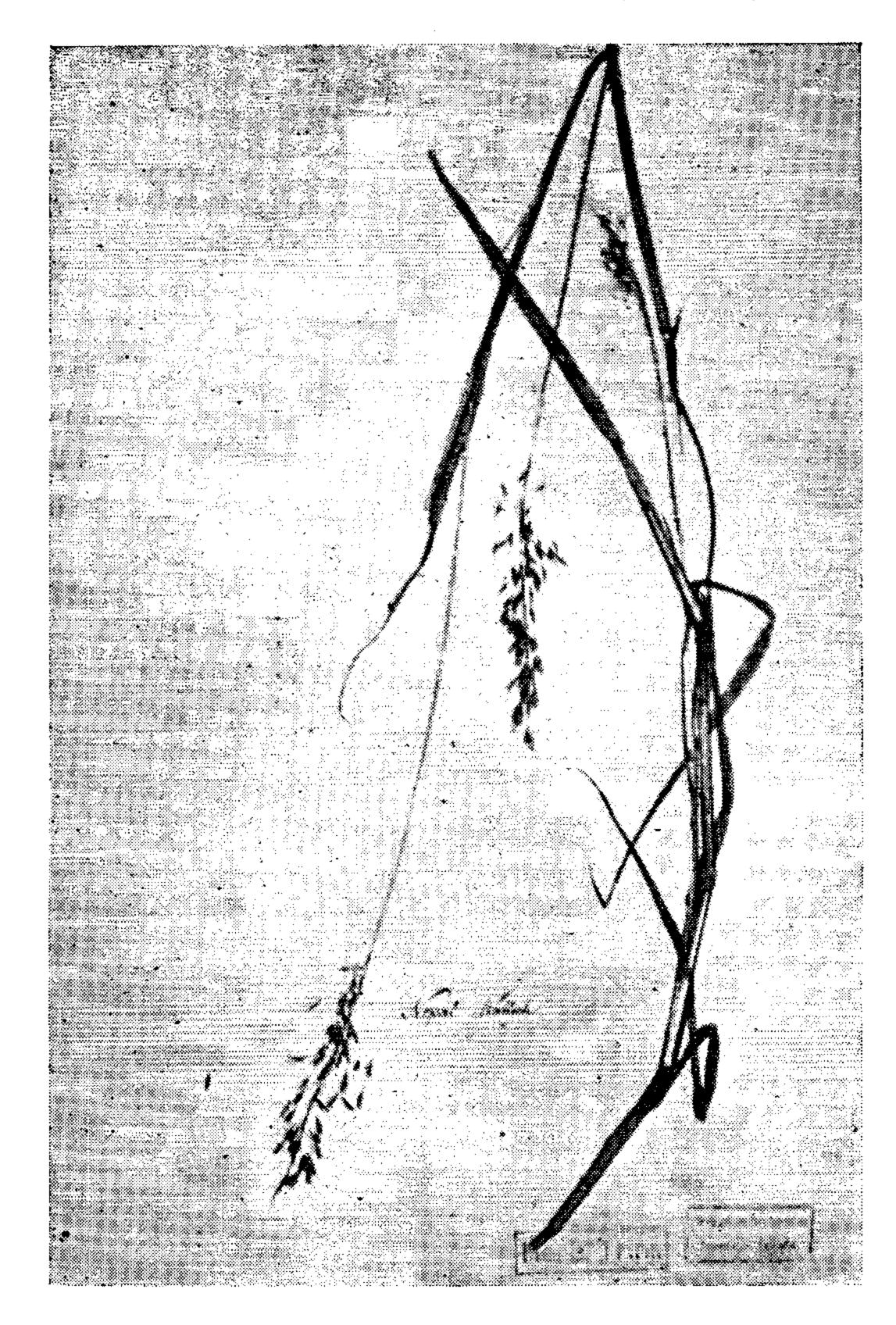


Fig 2. Chrysopogon serrulatus Trin.

As mentioned above, the author confined his observations to the taxa known to occur within (or contiguous to) the present boundaries of India. The following list will be far from complete, because in many U.S.S.R. herbaria the types

undetected type specimens. The author himself discovered many such instances in the Leningrad and Dushanbe herbaria, and labelled them as syntypes, para-types or lectotypes.

The following list includes about 100

type specimens belonging to 40 genera and 82 species; only those type specimens are mentioned whose duplicates have not, so far, been found in any Indian herbarium. All these sheets are available in the herbarium of the Komarov Botanical Institute at Leningard (LE).

The taxa are arranged alphabetically, and mostly, the names given by Bor (1960) have been adopted. The page number of Bor's book is mentioned opposite the name of the species. In case of bamboos, and certain other species not mentioned in Bor, the reference of Hooker's Flora of British India (1897) is given.

After the correct name, the basonym (where applicable) is given. In some cases, the type specimen listed here was not the basis of the current accepted name, but of one of its taxonomic or nomenclatural synonyms; this synonymy has been taken on the authority of Bor (l.c)

The name of the herbarium or collector is followed by collection number, locality, altitude, etc., and finally the date or year of collection. Such complete data, however, is available on only a few sheets; on others, merely the name of the collector and/or herbarium or locality is given.

In most cases, the authenticity of the original collection, taken here as basis of the type, has been verified from *Index to Grass Species* (Chase and Niles 1962).

In the end, in parenthesis, the nature of the type (if known), and a short description of the sheet, or of the labels and annotations on it, is given.

In addition to the conventional abbreviations of names of authors of taxa or localities, the following abbreviations have been used in the paper: Bas. —Basonym; Herb. —Herbarium; Syn. —Synonym; Var. —Variety.

Agrostis hookeriana Clarke. 387. Hooker, Sikkim, 8-12,000' (One sheet with one complete specimen and one upper part).

Agrostis nervosa Nees ex Trin. 388. Herb. Royle, Northwestern India (Cotype; one sheet with many complete specimens).

Agrostis pilosula Trin. var. royleana (Trin.) Bor. 388.

Bas. Agrostis royleana Trin.

Herb. Royle, Northwestern India (Cotype; one sheet with many complete specimens).

Agrostis zenkeri Trin. 392.

Zenker, Nilgiri (Three sheets, one annotated by Trinius).

Agrostis: see Deyeuxia.

Alopecurus borii Tsvel. (Under publication).

Nadezhina, Czardzhov, Turkomania, 8.5.1958 (Holotype).

Thomson, Upper Gangetic Plains, Tropical Region (Paratype; two sheets). Amblyachyrum: see Apocopis.

Andropogon: see Arthraxon, Bothriochloa, Cymbopogon, Microstegium and Pseudopogonatherum.

Apocopis courtaliumensis (Steud.)
Henr. 95.

Syn. Apocopis wightii Nees ex Thw.

Herb. Wight 2352, Peninsula India Or. (Two specimens on one sheet).

Apocopis mangalorensis (Hochst.)
Henr. 96.

Bas. Amblyachyrum mangalorensis Hochst.

Herb. Hohenacker 231 a, Pl. India Or. Terra Canara (Syntypes; sheet has four specimens, one is complete with roots).

Apocopis paleacea (Trin.) Hochr. 96.

Bas. Ischaemum paleaceum Trin.

Wallich, Nepal (One sheet).

Aristida funiculata Trin. et Rupr. 410. Syn. Chaetaria murina β villosa Nees et Eberm.

Herb. Wight 73, Peninsula India Or. (Syntype; the sheet has six plants).

Aristida mutabilis Trin. et Rupr. 411. Th. Kotschy 103, Fl. Aethiopia, Corfodan in Montibus, 1837-38 (Three sheets; syntypes).

Aristida pennata Trin. (Fig. 1.). 698. Herb. Pallasii, Hab.? (Annotated by Trinius). This collection is believed to be from Jaicum, Ural, Rossia (Chase and Niles l.c.).

Aristida royleana Trin. et Rupr. 412. Syn. Aristida funiculata Trin. et Rupr. var. royleana (Trin. et Rupr.) Hook. f. Herb. Royle, India Mont. (Nees Herb.) 1836 (One sheet).

Arthraxon lancifolius (Trin.) Hochst.
100 (partim).

Bas. Andropogon lancifolius Trin.
Herb. Lindley, Wallich, Nepal,
Royle, Mont. India Or.
Schimper 1362, Abyssinia (All annotated by Trinius, and syntypes; Wallich's sheet chosen lectotype, Jain (1971a).

Schimper 96, Abyssinia, prope Adoam.

Arthraxon microphyllus (Trin.) Hochst.

Syn. Psilopogon schimperi Hochst.

100 (partim).

Bas. Andropogon microphyllus Trin. Herb. Lindley, Wallich, Nepal (One sheet with four specimens, annotated by Trinius; lectotype chosen by Jain 1971a).

Note: Arthraxon sikkimensis Bor is synonymous with it.

Arthraxon quartinianus (Rich.) Nash. 102.

Syn. Pleuroplitis quartiniana (Rich.) Regel var. caespitosa.

Herb. Zenker, Schmidt, Nilgiri; and Schimper, Mont. Cojetanis Prov. Schire in Abyssinia (Syntypes for var.

caespitosa, which is not treated as dis tinct; one sheet).

Arundinaria interrupta Trin. (Not mentioned in Hooker l.c.)

Herb. Rudge, Wallich, Nepal (One sheet).

## Arundinaria spathiflora Trin.

(Hooker 382).

Herb. Lindley, Wallich, Nepal (One sheet).

Arundo: see Calamagrostis and Deyeuxia.

Bothriochloa caucasica (Trin.) Hubb. 106.

Bas. Andropogon caucasicus Trin. Wilhems, Caucasus Orient, 1827 (One sheet). This grass has been reported from central India only recently (Jain 1966).

Brachiaria mutica (Forssk.) Stapf. 284. Syn. Panicum barbinode Trin.

Riedel, Bahia 1831 (One sheet). This grass is introduced into India.

Brachiaria remota (Retz.) Haines. 285. Syn. Panicum petiveri Trin.

Lindley, India Or. (One sheet. annotated by Trinius.)

Brachypodium sylvaticum (Hudson)
Beauv. Bor, 450; Hooker 363.
Syn. Brachypodium scaberrimum Wt.
et Nees ab Eberm.

Herb. Wight, Peninsula India Or. 1796 (The sheet has two specimens).

Syn. Brachypodium fontanesianum Nees. Ecklon, Tulbagh, Worcester, South Africa 1844 (The sheet has several specimens).

Bromus danthoniae Trin. 453. Meyer, Talusch, Swant 1830 (One

sheet).

Herb. Fischer, Szovits 263, Seidkozi, Adjerbaijan, Persia, 18.5.1828. (Annotated by Trinius).

Bromus diandrus Roth. 454. "Semina inter Posulles majores lecto

Majo mense terra comissa, plante nunc (Octobri mense) florentes producerent." (One sheet with complete specimen and rich inflorescence). Perhaps introduced into India.

Bromus gedrosianus Penzes. 454. Duthie 8738, Baluchistan, 10.4.1888 (One sheet; isotype).

Bromus gracillimus Bunge. 454.

Syn. Bromus crinitus Boiss. et Hohen.

Kotschy 133, Pl. Persia bor. in Mont.

Elbus, Passola, 12.5.1843 (One sheet with several plants).

Calamagrostis emodensis Griseb. 395. Syn. Calamagrostis nepalensis Hook.f. non Nees.

Herb. Schlagintweit 9718 from India and High Asia, Garhwal, 1855.

Calamagrostis pseudophragmites (Hall. f.) Koeler. 396.
Syn. Arundo littorea Schrad.
Herb. Schrader, Wulfen in arenosis

Herb. Schrader, Wulfen in arenosis littoralis Austriaci; Fluegge in insuli Denubi (Both collections on one sheet). Syn. Calamagrostis nepalensis Nees ex Steud.

Royle Herb. 288, Nepal (One sheet).

Calamagrostis stolizkai Hook. f. 397. Stolizka, Zanskar on Pensi-La, 12-15,000' (One sheet). Chaetaria: see Aristida.

Chrysopogon serrulatus Trin. (Photo 2.). Wallich, Nepal (one sheet). 118.

Coelorhachis glandulosa (Trin.) Stapf ex Ridley. 120.

Bas. Rottboellia glandulosa Trin.

Java. (One sheet, annotated by Trinius).

Cymbopogon martinii (Roxb.) Watson.

Syn. Andropogon pachnodes Trin.

Hornemann Fast Nepal 1820 (Sheet

Hornemann, East Nepal 1820 (Sheet has five specimens, one is complete; annotated by Trinius).

Deyeuxia arundinacea (L.) Beauv. 398. Bas. Agrostis arundinacea L,

Upsaliae (One sheet; nature of type not known).

Syn. Arundo sylvatica Schrad.

Herb. Schrader, Gotingae (Two sheets, one with a complete specimen; other with upper portion of two specimens).

Digitaria granularis (Trin.) Henr. 301. Bas. Paspalum granulare Trin. Jacquin, India Or. (Earlier, Banks had labelled it as Milium setaceum Koen.; later Trinius annotated it as new species. The sheet has only a packet having few spikelets, and an illustration).

Dimeria fuscescens Trin. 140. Herb. Lindley, Wallich, Nepal (One sheet).

Dimeria ornithopoda Trin. 142. India Or. (Annotated by Trinius).

Dimeria tenera Trin. Hooker 104. Chamisso, Manilla, 1821. Hackel (1889) treated it as a distinct variety of Dimeria ornithopoda Trin. Hooker (l. c.) treated it as synonymous with that species. Bor (l. c.) makes no mention of it.

Elymus dahuricus Turcz. 669. Turczaninow, Charatzai, Dahuriae, Siberia 1829 (One sheet).

f.) Bor. 495.

Bas. Eragrostis leioptera Stapf ex
Hook. f.
Clarke 40381, Cherra 4000' Khasia,
11.9.1885 (The sheet has many specimens; paratypes).

Eragrostiella nardoides (Trin.) Bor. 495. Bas. Eragrostis nardoides Trin.

Nepal (One sheet with complete specimen).

Eragrostis aspera (Jacq.) Nees. 501. Syn. Eragrostis laxiflora Schrad. "Gram. Drege 4285, 4225, Cap. 6. sp." (Original reference not seen; 'Typus' written on label. Another label reads 'Teste: Herder) Eragrostis aspera Nees').

Eragrostis atrovirens (Desf.) Trin. ex 503.

Bas. Poa atrovirens Desf.

Herb. Desfont, in arvis incultis prope La Calle, Algeria, Africa (The sheet has two specimens; the one on right only is this grass).

Eragrostis ciliaris (L.) R. Br. 506. Syn. Eragrostis lepida (Rich.) Hochst., based on Poa lepida Rich.; Schimper 1040, Abyssinia, 31.3.1839 (One sheet).

Eragrostis lehmanniana Nees. 509. Herb. Seidlitz. Drege, South Africa (Cotype; one sheet with upper part of culm; inflorescence and leaves, no roots).

Eragrostis macilenta (Rich.) Steud. 509. Bas. Poa macilenta Rich.

Quartin Dillon, Crescit in locis circe Adoua (Cotype; one sheet with four complete specimens).

Eragrostis nigra Nees ex Steud. 511. Syn. Eragrostis atropurpurea Hochst. Metz 938, herb. India Montibus Nilagiri (One sheet with one good clump of specimens).

Eragrostis plana Nees. 512.

Drege, Kochu, Zondplast, Geckau,
Basche (Cotype; one sheet with upper
portion of specimen).

Eragrostis tenuifolia (Rich.) Hochst. ex Steud. 514.

Bas. Poa tenuifolia Rich.

Schimper 92 E. Abyssinia, Adoua, 18. 9. 1837 (One sheet with two good specimens; cotypes).

Syn. Eragrostis parviglumis Hochst.

Metz 936, Pl. India Or. Montibus Nilagiri (One sheet with two complete specimens).

Eragrostis tremula Hochst. ex Steud. 514.

Kotschy 6, Nubia, Abu-Gerad,,
18. 9. 1839 (One sheet; cotype).

Syn. Poa rhachitricha Hochst.

Metz 280, Pl. India Or. Mangalor (One

sheet with two specimens, both lacking roots).

Eragrostis viscosa (Retz.) Trin. 515. Syn. Eragrostis mangalorica Hochst. Metz 262, Pl. India Or. Mangalor (One sheet with five clumps, all complete plants).

Eragrostis: also see Eragrostiella.

Eremopoa persica (Trin.) Roshev. 532.

Bas. Poa persica Trin.

Szovits, Poa no. 246, Armenia,

27.5.1829 (One sheet with six specimens).

Eremopyrum buonapartis (Spreng.) Nevski. 671.

Bas. Triticum buonapartis Spreng.

Syn. Triticum squarrosum Roth.

Roth 1802 (Three specimens mounted on one sheet, two labelled as *Triticum squarrosum*, and one as *T. buonapartis*).

Eulalia: see Miscanthus.

Eulaliopsis binata (Retz.) Hubb. 158. Syn. Spodiopogon angustifolium Trin. Herb. Lindley, Wallich, Nepal (One sheet).

Festuca altaica Trin. 537. Ledebour and Meyer, in Summa Alpe Aejulac, 1826 (One sheet).

Festuca lucida Stapf in Hook. f. 538. Duthie 14481, Jaunsar, below Karambar peak, northwestern Himalaya, 1. 5. 1894 (Cotype; one sheet with complete specimen).

Ischaemum: see Apocopis.

Koeleria argentea Griseb. 444. Herb. Schlagintweit, 1856 (Cotype; one sheet).

Leucopoa albida (Turcz.) Krecz. et Bobr. 544.

Bas. Poa albida Turcz. ex Trin. Turczaninow, Baikal, 1829 (Lectotype by Tselov, in 1966).

Lophochloa cavanillesii (Trin.) Bor 445.

Bas. Trisetum cavanillesii Trin.

Haller, Helv. III.? (not legible;

lectotype). Fischer, Persia, 1828 (one sheet, anno-Melica persica Kunth. 592. tated by Trinius). Syn. Melica kotschyi Hochst. Syn. Pennisetum tiberiadis Boiss. Kotschy 366, Alepp. Kurdistan, Galileae, Tiberiadem, Khan Hussein 3. 8. 1841 (Cotype; one sheet). (One sheet). Syn. Melica pannosa Boiss. Pennisetum pediceliatum Trin. 346. Herb. Meyer, Syria, Souk-wadi, Bar-Peters, Cape Viride (One sheet). vada, June 1846 (two sheets). Pleuroplitis: see Arthraxon. Microstegium nudum (Trin.) Camus. Poa: see Eragrostis, Eremopoa, Leu-194. copoa. Bas. Pollinia nuda Trin. Pollinia: see Microstegium. Wallich 8831, India Or. 1848 (One Pseudopogonatherum contortum (Bronsheet with four specimens). gn.) Camus. 204. Microstegium petiolare (Trin.) Bor. Syn. Andropogon koretrostachys Trin. Chamisso, Manilla, 1820 (One sheet). 194. Bas. Spodiopogon petiolaris Trin. Psilopogon: see Arthraxon. Herb. Hornemann, Wallich, Nepal Puccinellia himalaica Tsvel. (The sheet has only an illustration Koelz 2216, Rupshur, Tsomorai Peldo, and a few spikelets in a packet). Kashmir, 8. 7. 1931. (Ex herb. N. Y. Microstegium vimineum (Trin.) Camus. Bot. Gdn. Plants of Western Hima-195. layas, collected for Uruswati Himalayan Bas. Andropogon vimineus Trin. Research Institute of Roerich Museum; Wallich 8838, India Or. 1848 (one one sheet with several specimens; type). sheet with many good specimens). Rottboellia: see Coelorhachis. Milium: see Oryzopsis. Sacciolepis indica (L.) Chase 357. Miscanthus nepalensis (Trin.) Hack. 196. Syn. Panicum angustum Trin. Bas. Eulalia nepalensis Trin. Herb. Hornemann, Wallich, Nepal Herb. Hornemann, Wallich, Nepal (One sheet with two specimens). (The sheet has only two small packets; Spodiopogon: see Eulaliopsis, Microone has a raceme, and the other a stegium. dissection). Sporobolus coromandelianus (Retz.) Oryzopsis lateralis (Regel) Stapf. Kunth. 627. Bas. Milium laterale Regel. Syn. Vilfa commutata Trin. Herb. Griffith, Aitchison 947, Afgha-Wight, Peninsula India Or. (The sheet nistan, Kurram valley, 1879 (one sheet has two small packets, and an illustrawith complete specimens). tion; annotated by Trinius). Panicum incomptum Trin. Sporobolus diander (Retz.) Beauv. 629. 326. Chamisso in Manilla, Philippines (One Syn. Vilfa erosa Trin. sheet). Herb. Mertens, Wight 30, India Or. Panicum: also see Brachiaria, Saccio-(One sheet). lepis, Thysanolaena. Sporobolus helvolus (Trin.) Dur. et Paspalum: see Digitaria. Schinz. 629. Pennisetum orientale Rich. Bor, 345. Bas. Vilfa helvola Trin. Hooker, 86. Ehrenberg, Arabia, Wadi-Diara (One

sheet).

Syn. Pennisetum fasciculatum Trin.

Stipa brevifolia Griseb.

643.

Herb. Schlagintweit 7105, Himalaya, Gnari Khorsum, Sep. 1855 (One sheet with four specimens; all upper portions of plants).

Stipa consanguinea Trin. et Rupr. Bunge, Altai, 1833 (One sheet).

Stipa himalaica Roshev. 644. Giles, Gilgit expedition, south of Hindukush, Jan. 1887 (One sheet).

Stipa mongholica Turcz. ex Trin. Turczaninow, Dechikinae, Mongholia (One sheet).

Syn. Stipa tibetica Mez.

Thomson, Tibet, 14,000' (One sheet; annotated by Tsvelov).

Stipa orientalis Trin. 645. Ledebour, Tscharysch and Meyer, Arakul, 1826 (One sheet).

Stipa purpurea Griseb. 645. Herb. Schlagintweit, Gnari Khorsum, 1855 (One sheet).

Stipa splendens Trin. 647. Syn. Stipa altaica Trin. Ledebour and Meyer, Siberia, July 1826 (Several sheets; one annotated by Trinius).

Stipa szovitsiana Trin. ex Hohen. 647.

Szovits 461, Khoi and Seidkozi, Prove. Adjerbaijan, Persia, 17.6.1829 (Three sheets; two annotated by Trinius, one by Hohenacker).

Thysanolaena maxima (Roxb.) Kuntze. 650.

Syn. Panicum acariferum Trin.

Wallich, India Or. (One sheet).

Trisetum: see Lophochloa.

Triticum: see Eremopyrum.

Urochondra setulosa (Trin.) Hubb. 634. Bas. Vilfa setulosa Trin.

Ehrenberg 492, Arabia ad Gaet Ma (The sheet has a packet with few spikelets; annotated by Trinius).

Vilfa: see Sporobolus, Urochondra.

#### Conclusion

The above account of type specimens of grasses will help the monographers to know if the type material of any of their taxa is available in herbaria of U. S. S. R. It should also help the workers in discovering duplicates of some of these sheets in Indian herbaria; which will be a very useful information for revision of Flora of India.

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