

WAZIRISTAN MOSSES

With some new species described by H. N. Dixon

BY

E. BLATTER and J. FERNANDEZ.

The following list embodies the results of two journeys in Waziristan: The first made by J. Fernandez in N. and S. Waziristan between the 20th March and 30th June, 1927, the second by both of us in N. Waziristan alone between the 17th March and 1st May, 1930.

The mosses gathered during the first trip were enumerated by H. N. Dixon in the Journ. Bomb. Nat. Hist. Soc. Vol. XXXIII (1929) 279 under the title: "Mosses collected in Waziristan by Mr. J. Fernandez in 1927."

In both cases the material was worked out by H. N. Dixon.

The mosses were obtained at elevations ranging from 2,450-9,000 ft.

'*Bunia*' was given as the vernacular name for moss in the neighbourhood of Dosalli in N. Waziristan.

We may be allowed to repeat a few remarks made by H. N. Dixon in the above paper: "The general character of the moss flora indicated is about what would be expected from the geographical position and conditions; the bulk of the species being those of moderate altitudes in the Western Himalayas, with a sprinkling of European and Western Asiatic types. The new species of *Splachnobryum* is a very marked and striking one, much the largest of the genus hitherto described; and the new species of *Bryum* is quite distinct, though its position in the genus is not altogether defined."

Regarding the second collection H. N. Dixon wrote in a letter: "The Waziristan mosses mostly duplicate those sent before, and this is natural, but it is good to find *Tortella subintegra* confirmed and to have *Weisia amblyphylla* cleared up."

The mosses represent 12 families and 31 genera.

FISSIDENTACEAE.

Fissidens Hedw.

Fissidens grandifrons Brid.—N. Waz.: Rocks near the springs N. of Razmak Camp, 7,300 ft. (No. 4213a, 4275a)—10-5-27.—On mud near the springs N. of Razmak Camp, 7,300 ft. (No. 4316)—7-5-27.

Fissidens involutus Wils.—*N. Waz.*: On soil, on hills E. of Miramshah Fort, 3,600 ft. (No. 4240b)—13-4-27.

POTTIACEAE,

Hymenostomum R. Brown.

Hymenostomum edentulum (Mitt.) Besch.—*N. Waz.*: On soil under bushes, in stony plain N. of Dosalli Fort, 4,900 ft. (No. 509)—10-1-30.

Weisia Hedw.

Weisia amblyphylla (Dix.) Dix. *comb. nov.*—*Hymenostomum amblyphyllum* Dix. in Journ. Bomb. Nat. Hist. Soc. XXXIII (1929) 279. "Peristome well developed; teeth long, in height equalling about 2/3 the diameter of the capsule; filiform, irregular, usually formed of 2 crura, which may coalesce into one for all or part of the length or may be parallel and connected here and there with one another; highly papillose throughout their length". (Dixon)—The plant therefore is a *Weisia* and not a *Hymenostomum*.

N. Waz.: On soil, on hills 2 miles above Dosalli Fort, 5,050 ft. (No. 505)—12-4-30.—On soil, hills S. of Dosalli Fort, 4,900 ft. (No. 519, 522, 523)—13-4-30.—On soil, on the slope of Chota Darweshta, 4,250 ft. (No. 547)—2-4-30.—On soil on hills E. of Miramshah Fort, 3,600 ft. (No. 4277)—13-1-27.

Hymenostylium Brid.

Hymenostylium curvirostre (Ehrh.) Mitt.—*N. Waz.*: On rocks of hill E. of Razmak Camp, 6,800 ft. (No. 551)—28-4-30.

Eucladium Bryol.

Eucladium verticillatum (L.) Bry. eur.—*N. Waz.*: W. of Razani Camp, 5,000 ft. (No. 3393)—19-1-27.

Timmiella Limpr.

Timmiella subintegra Dix. in Journ. Bomb. Nat. Hist. Soc. XXXIII (1929) 290.—*N. Waz.*: On mud, on hills E. of Miramshah Fort, 3,600 ft. (No. 4221),—14-4-27. (Nos. 4240, 4265)—13-4-27.—On soil, on hills along right bank of Khaisora river S. of Dosalli Fort, 4,900 ft. (No. 518)—13-4-30.—*S. Waz.*: Near top of conglomerate range E. of Jandola Fort, 2,500 ft. (Nos. 4202, 4229, 4231, 4257)—27-5-27.

Didymodon Hedw.

Didymodon alpigena Vent.—*N. Waz.*: On rocks, on the slopes of Shuidar peak, 7,000-8,000 ft. (No. 549)—18-4-30.

Didymon rufescens (Hook.) Broth., probably.—*N. Waz.*: On soil, on hills along the right bank of Khaisra river S. of Dosall Fort, 4,850 ft. (No. 513)—13-4-30.

Didymodon rufescens (Hook.) Broth.—*N. Waz.*: On rocks, at Barepatch hill, N.E. of Razmak Camp (No. 4314)—5-5-27.—The most westerly record for this distinctively Himalayan species.

Didymodon tophaceus (Brid.) Jur.—*N. Waz.*: On wet crumbling limestone rocks, S. W. of Razani Camp, 5,000 ft. (No. 3033)—19-4-27.

Didymodon sp. or Barbula.—*N. Waz.*: E. of Miramshah Fort (No. 4223)—14-4-27. A sterile plant belonging to one or other of these genera.

Didymodon sp.—*N. Waz.*: On soil, on the way to Chota Darweshta 4,250 ft. (No. 541)—2-4-30.

Barbula Hedw.

Barbula comosa Doz. & Molk., probably.—*N. Waz.*: On soil, at Datta Khel village, 4,600 ft. (No. 593)—17-4-30.

Barbula Ehrenbergii ((Lor.) Fleisch. (See note in Journ. Bomb. Nat. Hist. Soc. XXXIII (1929) 280-281).—*N. Waz.*: On moist crumbling rocks of soft limestone S.W. of Razani Camp, 5,000 ft. (No. 3528)—19-4-27.—*S. Waz.*: On rocks at Wanna plain, 4,500 ft. (No. 4364)—16-6-27.—On rocks by Tank river, Sararogha, 4,000 ft. (No. 4374)—18-5-27.

Barbula indica Brid.—*S. Waz.*: On rocks S. of Sararogha Fort, 4,000 ft. (No. 4252)—18-5-27. Probably its most westerly record in Asia.

Barbula javanica Doz. & Molk.—*N. Waz.* On moist soil, on the left bank of Chasmai river, near Miramshah 3,100 ft. (No. 575)—24-3-30.

Splachnobryum C. Mull.

Splachnobryum procerrimum Dix. in Journ. Bomb. Nat. Hist. Soc. XXXIII (1929) 281-282.—*S. Waz.*: Encrusted with calcareous matter, on decomposing rocks, on bank of the stream S.W. of Sarwekai Fort, 3,500 ft. (No. 4163 type; 3984)—7-6-27.

Splachnobryum pulcherrimum Dix. and Varde.—*N. Waz.*: On moist bank of Chasmai river, near Miramshah 3,100 ft. (No. 594)—24-3-30.

Crossidium Jur.

Crossidium sp.—*N. Waz.*: On mud, on hills S. of Boya Fort, 3,440 ft. (No. 4216b)—8-4-27.—On soil, on the ridge S.S.W. of Shewa Post, on the right bank of Kurram river, 2,450 ft. (Nos. 527, 535)—

5-4-30.—*S. Waz.*: On rocks S. of Sarwekai Fort, 3,500 ft. (No. 4361)—8-6-27.

This is either *C. squamigerum* or *C. griseum*: unfortunately the condition of the fruit—in the one case immature, in the other over-ripe—does not permit of the examination of the peristome.

Crossidium sp.—*N. Waz.*: On soil on sandstone ridge E. of Spinwam Fort, 2,800 ft. (No. 538)—3-4-30.—On soil, on hills W. of Miramshah Fort, 3,200 ft. (No. 542)—19-3-30.

Tortella

Tortella subintegra Dix.—*N. Waz.*: On soil, on hills E. of Miramshah Fort, 3,600 ft. (No. 540)—29-3-30.

Tortula Hedw.

Tortula atrovirens (Sm) Lindb.—*N. Waz.*: On soil, in rock crevices, at Boya, 3,440 ft. (No. 4214b)—2-4-27.—On soil at the foot of trees, on the right bank of Khaisora river, 2 miles above Dosalli Fort, 5,150 ft. (No. 508)—12-4-30.—On soil on the ridge S. S. W. of Shewa Post, on the right bank of Kurram river, 2,450 ft. (No. 526)—5-4-30.—*S. Waz.*: On mud, on the conglomerate range E. of Jandola Fort, 2,500 ft (No. 4230, 4232). Mostly in poor fruit. Only recorded in Asia, apparently from Caucasus and Syria.

Tortula inermis (Brid.) Mont.—*N. Waz.*: On wet mud, in a stony nullah N. of Dosalli Fort, 4,875 ft. (No. 507)—10-4-30.—On soil, in stony plain N. of Dosalli Fort, 4,900 ft. (No. 510)—10-4-30.—On soil, on hills beyond the Khaisora river S. of Dosalli Fort, 4,850 ft. (No. 513 bis)—13-4-30.—On soil, on right bank of Khaisora river, S. of Dosalli Fort, 4,825 ft. (No. 515)—13-4-30.—On soil, on hills S. of Dosalli Fort, 4,900 ft (No. 520), 13-4-30. A small form, on soil on the ridge S. S. W. of Shewa Post on the right bank of Kurram river, 2,450 ft. (No. 529)—5-4-30.—On soil, on hills E. of Miramshah Fort, 3,600 ft. (No. 531 ft. 539), —29-3-30.—On soil, on the slopes of Chota Darweshta, 4,250 ft. (No. 537, 543)—2-4-30.—On soil in rock-crevices on the slopes of Chota Darweshta, 4,150 ft. (No. 545)—2-4-30.—On soil on the slopes of Shuidar Peak, 6,000—7,000 ft. (No. 573)—18-4-30.—On soil, on hills W. of Miramshah Fort, 3,200 ft. (No. 574)—19-3-30.—On mud on hills S. of Boya Fort, 3,500 ft. (No. 4216a)—8-4-27.—On rocks *ibidem* (No. 4228, 4250 a).—*S. Waz.*: On rocks in torrent bed S. W. of Sararogha Fort, 4,000 ft. (No. 4260)—16-5-27—All in old fruit.

Eucalypta Schreb.

Eucalypta sp. May be *E. vulgaris* or *E. rhabdocarpa*; unfortunately the fruit in none of the specimens is sufficiently advanced to say which.—*N. Waz.*: On soil, on hills along right bank of Khaisora river, S. of Dosalli Fort, 4,850 ft. (No. 514, 516, 521)—13-4-30.

GRIMMIACEAE.

Grimmia Ehrh.

Grimmia commutata Hueben.—*N. Waz.*: On rocks at Loargai Narai, 6,425 ft. (No. 583, 584)—16-4-30.

Grimmia tergestina Tomm.—*N. Waz.*: On soil in rock-crevices, on low hills E. of Boya Fort, 3,500 ft. (No. 4214a)—2-4-27.—On rocks at Boya Fort, 3,440 ft. (No. 4,254)—27-3-27.—On hills E. of Miramshah Fort. 3,600 ft. (No. 4 269)—14-4-27.—On soil on the ridge S. S. W. of Shewa Post. on the right bank of Kurram river. 2,450 ft. (No. 523)—5-4-30.—*S. Waz.*: S. of Sarwekai Fort, 3,500 ft. (No. 42 7)—8-6-27.

Grimmia orbicularis Bruch.—*N. Waz.*: On mud, on high hills E. of Miramshah Fort, 3,600 ft. (No. 4206, 4207)—14-4-27.—On soil on sandstone ridge E. of Spinwam Fort, 2,800 ft. (No. 533)—3-4-30.—On soil. on right bank of Chasmai river near Miramshah a tributary of the Tochi 3 100 ft. (No. 544)—23-3-30.—No. 571 on soil on the ridge S. S. W. of Shewa Post, on the right bank of Kurram river, 2,450 ft. is probably the same species.—*S. Waz.*: On rocks S. E. of Wanna Fort, 4,500 ft. (No. 4344)—15-6-27.—Mostly in poor fruit.

Grimmia pulvinata Sm.—*S. Waz.*: On soil, N. of Sararogha Fort, 4,000 ft. (No. 4,210)—21-5-27.

Grimmia trichophylla Grey.—*N. Waz.*: On hills E. of Miramshah Fort, 3,600 ft. (No. 4208)—14-4-27.

ORTHOTRICHACEAE.

Drummondia Hook.

Drummondia Thomsoni Mitt., *robust form.*—*N. Waz.*: On soil, 2 miles above Dosalli Fort, 5,050 ft. (No. 500)—12-4-30.—*Normal form.*—on bark, in the plain N. of Dosalli Fort, 4,900 ft. (No. 501, 502)—11 4 30.—On bark of *Olea cuspidata* Wall.—On hills 2 miles above Dosalli Fort, 5,150 ft.—(No. 511)—12-4-30—On bark of *Olea cuspidata* Wall. In the bed of Khaisora river, S. of Dosalli Fort, 4,825 ft. (No. 524)—13-4-30.—On soil on right bank of Khaisora river, near Dosalli Fort, 4,825 ft. (No. 525)—13-4-30.—On bark of *Quercus ilex* Linn., on the way to the springs N. of Razmak Camp, 6,800 ft. (No. 552, 555)—25-4-30.—On rock of the lower slopes of Shuidar Peak, about 7,000 ft. (No. 564)—18-4-30.—On *Pinus* on the way to Shuidar Peak 8,000 ft. (No. 569)—18-4-30.—On *Pinus longifolia* Roxb. on the way to Shuidar Peak, 8,500 ft. (No. 572)—18-4-30.—On *Quercus ilex* Linn. on the slopes of the ravine below Razmak Narai, 7,000 ft. (No. 576, 578, 580)—14-4-30.—On soil at Loargai Narai, 6,425 ft. (No. 587); on bark of *Olea cuspidata* Wall, 6,450 ft.

(No. 589), 16-4-30.—On *Quercus ilex* Linn E. of Razmak Camp, 6,800 ft (No. 591)—26-4-30.—On Teherai trees (*Quercus ilex* Linn.) on the slopes of Bare-top hill N. E. of Razmak Camp (No. 3032 b, 4309)—5-5-27—E. of Razani Camp, 5,000 ft. (No. 4243, 4263, 4266, 4320)—20 and 21-4-27. Varies considerably in length of leaf and degree of acumination of the point. Mostly in very old and very young fruit.

This and *Lindbergia Duthiei* were the only truly corticolous mosses collected, and were generally growing together.

Orthotrichum Hedw.

Orthotrichum cupulatum Hoffm.—*N. Waz.*: On rocks at Loargai Narai, 6,450 ft. (No. 588)—16-4-30.

Orthotrichum pumilum Sw.—*N. Waz.*: On bark in the plain N. of Dosalli Fort, 4,900 ft. (No. 503)—11-4-30.—On bark of *Quercus ilex* Linn. on hills S.W. of Razmak Camp, 6,950 ft. (No. 563)—27-4-30.—On *Quercus ilex* Linn. at Loargai Narai, 6,450 ft. (No. 590)—16-4-30.

FUNARIACEAE.

Funaria Schreb.

Funaria hygrometrica (L.) Sibth.—*N. Waz.*: On rocks, on hills E. of Miramshah Fort, 3,600 ft. (No. 4429)—13-4-27.

Funaria mediterranea Lindb.—*N. Waz.*: On soil, on hills E. of Miramshah Fort, 3,600 ft. (No. 534)—29-3-30.—Mesopotamia is its eastern known limit hitherto.

BRYACEAE.

Mniobryum Limpr.

Mniobryum carneum (L.) Limpr.—*N. Waz.*: On rocks, on the slope of Bare-top hill, N.E.E. of Razmak Camp (No. 4324)—5-5-27.

Brachymenium Schwaegr.

Brachymenium acuminatum Harv.—*N. Waz.*: S. of Boya Fort, 3,440 ft. (No. 4250b)—8-4-27.

Bryum Dill.

Bryum amentirameum Dix. in Journ. Bomb. Nat. Hist. Soc. XXXIII (1929) 282.—*N. Waz.*: On rocks (probably), N. of Razmak Camp, 7,300 ft. (No. 4275)—10-5-27.

Bryum argenteum L.—*N. Waz.*: On soil under trees, on the slope of the ravine below Razmak Narai, 7,000 ft. (No. 579b)—14-4-30.

Bryum Schleicheri var. *latifolium* Schimp a lax form.—*N. Waz.*: On soil, on the slopes of Shuidar Peak, 8,000 ft. (No. 548)—13-4-30.

Bryum splachnoides (Harv.) C.M.—*N. Waz.*: On satiol, Datta Khel village, 4,600 ft. (No. 592), 17-4-30.

Bryum sp.—*N. Waz.*: On soil, on hills, right bank of Khaisora river, 2 miles above Dosalli Fort, 5,150 ft. (No. 512)—12-4-30.—On soil under bushes of *Acacia modesta* at Boya Post, 3,550 ft. (No. 530)—21-3-30.—On soil, on hill N. of Dosalli Fort, 4,925 ft. (No. 577)—15-4-30.

Bryum sp.—Several sterile and indeterminate species (No. 4357, 4372).—1927.

TIMMIACEAE.

Timmia Hedw.

Timmia bavatica Hessel.—*N. Waz.*: On slopes of Shuidar Peak from Razmak Camp, 8,000 ft. (No. 1575)—8-5-27. With young fruit.—On soil on the slopes of Shuidar Peak, 8,000-8,500 ft. (No. 548a, t 68) and on rocks in Pine forests (No. 570)—18-4-30.

NECKERACEAE.

Cryptoleptodon Ren. & Card.

Cryptoleptodon flexuosus (Harv.) Ren. & Card.—*N. Waz.*: On rocks, N. of Razmak Camp, 7,300 ft. (No. 4330)—7-5-27. A very slender form. If the habitat is correctly given it is unusual, as the plant is nearly always found hanging from branches of trees.

FABRONIACEAE.

Fabronia Radd.

Fabronia Goughii Mitt.—*N. Waz.*: On bark on hills beyond the Khaisora river, about 4,900 ft. (No. 504)—13-4-30.

LESKEACEAE.

Leptopterigynandrum.

Leptopterigynandrum brevirette Dix. *sp. nov.* *L. subintegr* (Mitt.) Broth. *peraffine*; *differt* (quoad *stirpem gametophytum*) *habitu paullo graciliore, ramis brevioribus, foliis magis patentibus, longius acuminatis, cellulis brevioribus, plerumque ovalibus, parietibus paullo crassioribus, nervis binis brevissimis aut nullis. Dioicum. Perichaetium breve, bracteis erectis, leniter curvatis, substrictè breviter acuminatis. Seta circa 8 mm. longa, rubra. Theca erecta, aequalis, castanea subnitida, 1.5 mm. longa, elliptica. Peristomii fragmenta solum visa, viz., endostomii membrana altiuscula, sat fortiter articulata.*

N. Waz.: On bark of a tree, way to Shuidar Peak from Datta Khel, 7,000 ft. (No. 536)—18-4-30.

The genus *Leptopterigynandrum* was separated from *Heterocladium* partly on the ground of having the alar cells better differentiated, but also, and more soundly on the erect, symmetric capsule. The present species is very near to *Heterocladium subintegrum* Mitt. (only known

sterile), but that has longer, more rigid, less branched stems, more closely imbricated leaves with shorter points, and the cells longer, more rhomboid, thin-walled, very smooth, the marginal shorter and subquadrate. Here they are smaller, more irregular, usually elliptic, rounded, less rhomboid, and with rather thicker walls (Dixon).

Lindbergia Kindb.

Lindbergia Duchiei Broth.—*N. Waz.*: On Teherai trees (*Quercus ilex* Linn.) on slope of Bare-top hill N.E. of Razmak Camp (No. 3032a, 1394, 4296, 4302, 4305)—5-5-27. Mostly rather starved but in fruit.—On bark of *Quercus ilex* Linn. on hill W. of Razmak Camp, 6,950 (No. 553)—27-4-30.—On bark of *Berberis* sp. in a ravine E. of Razmak Camp, 6750, (No. 562)—28-4-30.—On bark of *Olea cuspidata* Wall. on hills S.W. of Razmak Camp 6,950 ft. (No. 566)—27-4-30.

HYPNACEAE

Amblystegium Bryol.

Amblystegium serpens (L.) Bry. eur.—*N. Waz.*: On soil, N. of Razmak Camp, 6,300 ft. (No. 1739)—7-5-27. Sterile.

Homomallium Loesk.

Homomallium simlaense (Mitt.) Broth.—*N. Waz.*: On trees N. of Razmak Camp, 6,500 ft. (No. 1709, 1716)—7-5-27. With a few capsules.

Cratoneuron Roth.

Cratoneuron decipiens (De Not.) Loeske.—*N. Waz.*: In stream, from the springs N. of Razmak Camp, 7,300 ft. (No. 4213b)—10-5-27. Hitherto not found east of Persia.

Cratoneuron filicinum (L.) Loeske.—*N. Waz.*: On slope of Bare-top hill N.E. of Razmak Camp (No. 3131)—5-5-27.—On moist rocks in the bed of Shuidar Algad N. of Razmak Camp, 7,700 ft. (No. 559, 560)—25-4-30.

Cratoneuron filicinum (L.) Loeske **forma** —*N. Waz.*: On moist rocks in the bed of Shuidar Algad, N. of Razmak Camp, 7,700 ft. (No. 554, 557)—25-4-30.

Cratoneuron filicinum (L.) Loeske **var. fallax** (Brid.) Moenk.—*N. Waz.*: On moist rocks in the bed of a stream fed by snow-water, on the slope of Shuidar Peak from Datta Khel, 8,000—9,000 ft. (No. 567)—18-4-30.

Stereodon Mitt.

Stereodon cupressiformis (L.) Brid.—*N. Waz.*: On rocks N. of Razmak Camp, 7,300 ft. (No. 4330b)—7-5-27.—On moist rocks on slope of Shuidar Peak, 8,000 ft. (No. 565)—18-4-30.—On soil under trees on the slope of the ravine below Razmak Narai, 7,000 ft. (No. 579a)—14-4-30.

Var vaucherianus, *var. nov.* Dix. in Journ. Bomb. Nat. Hist. Soc. XXXIII (1920) 283.—*N. Waz.*: On rocks N. of Razmak Camp, 7,300 ft. (No. 1734)—7-5-27.—On tree on slope of Bare-top hill N. E. of Razmak Camp (No. 3166)—5-5-27. A curious plant, which seems almost mid-way between *Stereodon cupressiformis* (L.) Brid. and *S. Vaucheri* (Lesq.) Lindb. It has often the orange-red colouring which is rather characteristic of *S. Vaucheri*, but unusual in *S. cupressiformis*.

Stereodon vaucheri (Lesq.) Lindb.—*N. Waz.*: On slope at base of trees and bushes, S. of Razani Camp, 5,000 ft. (No. 3016, 4246)—25-4-27.—On bark of *Quercus ilex* Linn. on the slopes of the ravine below Razmak Narai, 7,000 ft. (No. 581)—14-4-30.

BRACHYTHECIACEAE

Brachythecium Bryol

Brachythecium falcatum (Broth.) Par.—*N. Waz.*: On rocks and on soil, on the slopes of Shuidar Peak, 7,000-8,000 ft. (No. 550)—18-4-30.

Brachythecium microsericeum Dix. *sp. nov.* § *Velutinium*. *Terrestre*; *pallido-viride, coespitosum*. *A congeneribus (e.g. B. olympicum, B. salicinum) differt foliis confertis, strictis, siccitate erectis, appressis, atque costa multo brevior, saepe perdebili, plerumque circa dimidiam partem folii attingente. Cellulae alares sat numerosae, parvae, subquadratae, ad margins altiuscule ascendentes. Setae fragmentariae, laeves, verisimiliter perbreves, adsunt.*—*N. Waz.*: On soil at Loargai Narai, 6,425 ft. (No. 586)—16-4-30.

“A delicate species near to *B. velutinum* or its more slender allies with smooth setae, but marked by the dense, erect, very narrow leaves, giving the plant the very silky appearance of a miniature *Homalothecium*, e.g., *H. sericeum*. The nerve is usually short and weak, and may even be nearly obsolete.” (Dixon.)

Brachythecium waziriense Dix. in Journ. Bomb. Nat. Hist. Soc. XXXIII (1929) 283.—*N. Waz.*: On tree, N. of Razmak Camp, 7,300 ft. (No. 1716, type)—6-5-27.—*Ibidem*, 7,800 ft. (No. 1625)—8-5-27.

Oxyrrhynchium Warnst.

Oxyrrhynchium rusciforme (Neck.) Broth.—*N. Waz.*: On moist rocks in the bed of Shuidar Algad, N. of Razmak Camp, 7,700 ft. (No. 558)—25-4-30.

Indeterminable. *N. Waz.*: On soil, on the nearest hills E. of Spinwam Fort, 2,750 ft. (No. 532)—3-4-30.—On soil, on the ridge S. S. W. of Shewa Post, on the right bank of Kurram river, 2,450 ft. (No. 546)—5-4-30.