

**Contributiones novae ad Floram Bryophyton
Japonicam.**

Pars Prima.

Elaboravit

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*Cum figura unica inserenda
et 24 tabulis suffivis.*

Sub indicem "Neue Beiträge zur Moosflora Japans" descripsi jam anno 1911, in volumine XXV Botanical Magazine, Tokyo, Muscos et Hepaticas ad Floram Japonicam novas.

Opusculum praesens est continuatio illius, continetque nonnullas species novas et varietates, nec non illas ex insulis Sachalin, Amami-Ôshima (Liuchu) et peninsula Coreana etc., quarum Flora Bryophyton adhuc nostris tantum minus cognita est, nove decerptas.

Hoc opusculum confesi ducto peritissimo et consiliis crebris illustrissimi Professoris JINZÔ MATSUMURA, cui gratias maximas ago.

Tôkyo, mense Maii 12 anni 1914.

I. Hepaticae.

Marchantiaceae

Conocephalus suprade-compositus (LINDB.) STEPH.

Kyûshû: Prov. Ôsumi, Akitoku, Amami-Ôshima (Coll. K. MIYAMOTO! Aprili, 1910.).

***Dumortiera hirsuta* (SW.) NEES.**

Ryûkyû: in insula Okinawa (Coll. T. MIYAGI! Augusto 18, 1912.); Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima (Coll. S. NODUTE!).

***Marchantia tozana* STEPH.**

Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima (Coll. S. NODUTE! Majo 1913.).

Jungermaniaceae anakrogynae.***Aneura palmata* (HEDW.) DUM.**

Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima (Coll. K. MIYAMOTO! October, 1909); Ôkachi, Amami-Ôshima (Coll. K. MIYAMOTO! Martio, 1911.).

***Pellia calycina* (TYL.) NEES.**

Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima (Coll. K. MIYAMOTO! October, 1909.).

Jungermaniaceae akrogynae.***Aplozia tovalaensis* SH. OKAMURA. Sp. nov.**

(Tab. I. A-G.)

Habitatio aquatica, ad rupes. **Plantæ** robustiusculæ, cæspitosæ, cæspitibus laxis densiusculis mollibus virescentibus sicca nigrescenti-virescentibus haud nitidis. **Caulis** prostratis, basi filiformis et nudus, haud radiculosus, c. 5-8 cm. longus et cum foliis c. 2-3 mm. latus, simplex vel irregulariter parce (c. 1-5) ramosus, in apice sæpe elongate (c. 1.0-1.5 cm. longus) et flagelliformiter innovando-ramosus, sectione plano-oblongus, c. 0.3-0.4 × 0.18-0.22 mm. crassus, cellulis ubique fere ejusdem magnitudinis hexagonis c. 40 μ magnis; ramis lateralis, ab ventrali-axilla folii, c. 1-2 cm. longis, apice sæpe flagelliformiter elongatis; ramis innovationibusque basi hyalino- vel lutescenti- radiculosis. **Folia** infima minoriora, superiora majora, oblique inserta, remota, sicca

vix crispata, humida horizontalia, late ovata vel ovato-ovalia, apice rotundato-obtusa, concava, basi subcarinata, c. 0.8–2.0 mm. longa et c. 0.8–1.5 mm. lata, marginibus integerrimis; cellulis tenellis, haud incrassatis (trigonis nullis, parietibus hyalinis), valde chlorophyllosis, apice hexagonis c. 24–32 μ , dein ad basin sensim longioribus, in medio folii c. 40–50 μ longis et c. 20–30 μ latis, basilaribus laxioribus c. 50–60 μ longis et c. 32–40 μ latis, sed ad angulos angustioribus, marginalibus quadratis vel subquadratis c. 24–30 μ magnis. **Amphigastria** 0. **Cætera** ignota.

Hondo: Prov. Mutsu, Lacus Towada (Coll. HARUFUSA NAKANO! Augusto 10, 1912.).

Nomen speciei ab Lac. Towada.

Species cum **A. ripario** et **A. pumilo** comparanda, sed statura robustiore, ab hic foliis remotis, ab illia cellulis folii tenellis trigonis nullis dignoscenda.

Diese Art gedeiht auf den Felsen, vom Wasserspiegel bis zur 6 Meter tiefen Stelle, in Mikadoishi (御門石) in der Mitte des Towada-sees (十和田湖).

Blepharostoma trichophyllum (L.) DUM.

Sachalin: Notoro (Coll. HIROSHI YOSHIDA! Augusto, 1913.).

Herberta adunca (DICKS.) GRAY. Nat. Arr. Brit. Pl. 1. p. 705 (1821.).

Kyûshû: Prov. Ôsumi, in monte Nishi-Kirishima (Coll. BUIITSU FUKAZAWA! Septembri 29, 1910.); Shikoku: Prov. Iyo, in monte Ishiduchi (Coll. JUKICHI SHIRAGA! Septembri 1906.).

Species nova ad floram japonicam. **Distr.** Scotia.

Scapania nemorosa (L.) DUM.

Sachalin: Notoro (Coll. HIROSHI YOSHIDA! Augusto, 1913.).

Scapania spinosa STEPH.

Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima (Coll. K. MIYAMOTO! October, 1909.).

Ptichanthus striatus NEES.

Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima (Coll. S. NODUTE! Majo, 1913.).

II. Musci.

Archidiaceae.

Archidium japonicum BROTH. ms.

Syn. *Archidium tôkyôense* SH. OKAMURA. Bot. Mag. Tôkyô, vol XXIV. No. 287. p. 368–372, (1910).

(Tab. II.)

Habitatio terrestris. Minutissimum, caespitosum, caespitibus densiusculis lutescenti- vel fusco-viridibus nitidiusculis. **Inflorescentia** monoica; flores feminei in caule et ramis terminales; flores masculi ad basin perichætii in ramis propriis geminiformes; folia perigonialia late ovalia apice acuta, marginibus superne minute serrulatis, nervo tenuiore infra apicem folii evanido; antheridia 3–5, oblonga brevi-stipitata, c. 0.14–0.16 mm. longa, paraphysibus nullis. **Caulis** erectus, c. 2–5 mm. altus, basi fusco-radiculosus, simplex sæpe parce ramosus, e basi ad apicem multi innovando-ramosus sed haud flagelliforme elongatus, sectione teres, c. 0.17 mm. crassus, fasciculo centrali hyalino cellulis paucis composito, reti ceterum tenui, areolis ubique fere ejusdem magnitudinis hexagonis hyalinis vel lutescenti-fuscis, stratis superficiali lutescentibus; caulibus ramisque densiuscule foliosis. **Folia** sicca adpressa, humida erecto-patentia, inferiora remota minuta superiora sensim majora, summa in coman congesta; folia inferiora concaviuscula, lanceolata vel anguste oblongo-lanceolata, in acumen sublatum canaliculatum attenuata, c. 0.3–0.7 mm. longa et c. 0.2–0.24 mm. lata, marginibus subintegris, basi subplanis apice erectis, nervo valido, cum apice evanido; folia comalia multo majora, concava, oblongo- vel ovato-lanceolata, in acumen lanceolato-sublatum canaliculatum vel subcarinatum attenuata, c. 0.9–1.1 mm. longa et c. 0.36 mm. lata, marginibus erectis, e medio ad apicem minute serrulatis; nervo valido, cum apice evanido, fusco, in sectione transversali plano-convex, dorso valde prominenti, basi e cellularum uniformium incrassatarum stratis 4 composito, cellulis ventralibus 4, dorsalibus 6–7; cellulis laminalibus basilaribus ad

nervum rectangularibus c. 28μ longis et c. 16μ latis, ad margina quadoratis c. 14μ magnis, e medio folii ad apicem rhomboideis vel lineari-rhomboideis c. $28-40-50\mu$ longis et c. $10-14\mu$ latis, omnino laeves chlorophyllosis. **Bracteae perichætii** intimæ vaginantæ, late oblongo-lanceolatae, in acumen lanceolato-sublatum apice spiraliter contortum attenuatae, c. 1.2-1.4 mm. longæ et c. 0.42-0.5 mm. latae, marginibus apice minute serrulatae; nervo valido, cum apice evanido; cellulis basilaribus ad margina elongate rectangularibus hyalinis, ceteris foliis similes. **Vaginula** anguste obconica vel obovata, c. 0.24 mm. alta et apice c. 0.14 mm. lata, fusca apice nigrescens. **Theca** immersa, in vaginula omnino sessilis, globosa vel subglobosa, c. 0.34-0.42 mm. in diam, lutescenti-viridis veterrimo apice sæpe fusca, brevi-bulbifera, bulbo tereti; cellulis exothecii 4-6-angularibus vel breve rectangularibus, c. $20-28\mu$ magnis. **Spori** 8-32 plerumque 16 vel 20, c. 0.12-0.15-0.19 mm. in diam., lutescenti-virides lutescentes vel lutescenti-fusci, laeves. **Calyptra** ignota. **Matur** primo vere.

Hondo: Prov. Musashi, Tôkyô (Coll. TOMITARO MAKINO! Janus, 1906.).

Species cum **A. ephemeroide** et **A. subulato** comparanda, ab hic foliis in acumen lanceolato-sublatum attenuati, nervo valido cum apice evanido, sporis laevibus, ab illic foliorum forma, ab utraque specie foliis apice minute serruratis dignoscenda.

Dicranaceae.

Dicranella recurvmarginata SH. OKAMURA. sp. nov.

(Tab. III.)

Habitatio in terra. Valde parvula, caespitosa, caespitibus laxiusculis nitidiusculis lutescenti-viridibus. **Inflorescentia** dioica; planta mascula femineae similis; flores masculi terminalis 1-2, geminiformes; folia perigonia 5-7, intima ovato-lanceolata apice acuminata, summo apice hyalina, c. 1.2-1.4 mm. longa et c. 0.6 mm. lata, concava, marginibus anguste recurvis; nervo valido, cum apice folii evanido. **Caulis** erectus, strictus, basi radiculosus,

c. 1.2–1.6 mm. altus, simplex, sectione teres, c. 0.14 mm. in diametro, fasciculo centrali arto, cellulis perpausis (c. 4.) composito, reti ceterum crassiusculis, areolis ubique fere ejusdem magnitudinis, hexagonis, c. 12–14 μ in diametro, peripherico e cellulis minoriusculis subquadratis vix magis incrassatis composito. **Folia** inferiora minuta remota, superiora sensim majora, sicca adpressa haud crispata, humida erecto-potentia vel suberecta, e basi contracta oblongo-lanceolata vel ovalio-lanceolata apice sublato-acuminata, summo apice hyalina, usque ad 1. mm. longa et 0.32 mm. lata, concava, marginibus e basi ad basin acuminis fortiter recurvis, apice minute serrulatis; nervo valido, cum apice evanido, dorso superne biseriato-serrulato, in sectione transversali plano-convexo, dorso valde prominenti, basi c. 42 μ crasso, cellulis ventralibus 4, tenellis inanibus, ducibus medianis 2, fasciculo stereidarum bi-tristrato lunato-formi, cellulis dorsalibus c. 10 majoribus bene distinctis; cellulis laminalibus rectangularibus, c. 20–40 μ longis et e. 8–10 μ latis, superioribus c. 15–30 μ longis et c. 3–4 μ latis, marginalibus angustis, basilaribus laxioribus, alaribus nullis. **B-racteae perichaetii** erectae, intimae e basi vaginante obovato-oblongae subito in acumen elongatum lanceolato-subulatum contracta, c. 1.7–2.0 mm. longae et basi c. 0.48 mm. latae, apice minute serrulatae, summo apice hyalinae; nervo basi tenui, e medio ad apicem valido, cum apice evanido, dorso superne biseriato-serrulato; cellulis basilaribus laxioribus rectangularibus, c. 30 μ longis et c. 15 μ latis, in medio rhomboideo-rectangularibus c. 9–10 μ latis. **Vaginula** cylindrica, c. 0.48 mm. longa, fusca; paraphysibus paucitas hyalinis c. 0.3 mm. longis. **Seta** erecta, c. 5 mm. longa, laevis, lutescenti-fusca, sicca apice torta. **Theca** suberecta vel inclinatula, leniter curvatula, plicatula, sicca valde curvata, asymmetrica, oblonga, c. 0.8–1.0 mm. longa et c. 0.4 mm. in diam; cellulis exothecii ad orificium in seriebus tribus minutis hexagonis c. 15 μ , ad medio majoribus, rectangularibus vel 4–6-angularibus, c. 30–40 μ longis et c. 20 μ latis; stomatibus in collo paucitibus, phaneroporis. **Annulus** duplex, c. 60 μ latus. **Peristomii** dentes lineari-subulati, ad medium bifidi, c. 0.32–0.35 mm. longi et basi c. 0.042 mm. lati, densiuscule (c. 14–16) articulati, rubiginosi, dense longitudinaliter

variolare striolati, apice hyalini et minute papilloso, cruribus liberis aequalibus saepe pertusi, intus remote c. 9 trabeculati. **Spori** c. 11–12 μ , laeves. **Operculum** e basi conicum longe rostratum, c. 0.4–0.64 mm. longum, fuscum, rostro curvato vel stricto obtuso. **Calyptra** cuculata, c. 1. mm. longa, operculum tantum obtegens, lutescenti-viridis apice fuliginosa.

Korea: Kangkai (Coll. RALPH G. MILLS, No. 530, Majo 13, 1911.).

Nomen speciei ab marginibus recurvis folii.

Species distinctissima, a congeneribus nervo folii in sectione plano-convexo et dorso valde prominenti, marginibus folii e basi ad basin acuminis fortiter recurvis, annulo distincto, peristomii dentibus longitudinaliter variolare striolatis apice minute papillosis dignoscenda.

Dicranella heteromalla (DILL., L.) SCHIMP.

Kyûshû: Prov. Ôsumi, Ôkachi, Amami-Ôshima (Coll. K. MIYAMOTO! Martio, 1911.);

Dicranum grönlandicum BRID. *var. sachalinense*

SH. OKAMURA. *var. nov.*

(Tab. IV.)

Habitatio terrestris. Subrobustum, caespitosum, caespitibus densis rigidiusculis inferne fuscis superne lutescenti-viridibus nitidis. **Caulis** erectus, strictus vel leniter flexuosus, c. 12 cm. altus, dichotome ramosus, per totam longitudinem paulum rubiginoso- vel fulvo-radiculosus, sectione teres c. 0.16–0.2 mm. crassus, fasciculo centrali c. 40 μ magno luteo, reti intermedio laxi, cellulis rotundato- vel elliptico-hexagonis subcollenchymaticis c. 15–25 μ longis parietibus crassiusculis rubiginosis, peripherico e cellulis 2–3-striatis minoribus c. 9–12 μ magnis incrassatis rubiginosis composito. **Folia** sicca adpressa, humida erecta, e basi contracta lineari-lanceolata, apice obtusa, c. 3.5–4.0 mm. longa et c. 0.56 mm. lata, marginibus basi incurvis et e medio ad apicem canaliculatim involutis, summo apice subplanis, integerimis; nervo cum apice evanido, basi luteo superne lutescenti, in sectione

transversali plano-convexo, dorso prominenti, basi c. 0.08–0.09 mm. lato ($\frac{1}{7}$ folii latitudinis occupante) et 0.035–0.040 mm. crasso, cellulis ventralibus c. 11, ducibus medianis 5–7, cellulis dorsalibus c. 15, stereidearum utrobique unistrato; cellulis laminalibus linearibus, c. 50–70–100 μ longis et c. 9 μ latis, parietibus latioribus porosis (lumine 2.5–5.0 μ lato), superioribus brevis c. 28 μ longis et c. 12 μ latis, alaribus distinctis, in margin 2-stratis, quadratis vel rectangularibus, c. 20–28 μ magnis, fusco-auris. **Inflorescentia** dioica; flores feminei pseudolateralis. **Bractee perichaetii** intimae erectae, basi alte vaginantae, subito in acumen canaliculatum lineari-subulatum attenuatae, c. 4.5–5.0 mm. longae, integerrimae; nervo tenui ad basin acuminis evanido; cellulis linearibus, parietibus c. 5–7 μ crassis porosis, lumine c. 1.5–2.5 μ latis, basiraribus laxioribus. **Vaginula** cylindrica, 0.8 mm. alta, fusca apice nigrescens; paraphysibus paucitas luteis c. 0.5 mm. longis. **Seta** c. 15–18 mm. alta, stricta vel strictiuscula, lutescenti-virescens, laevis, sicca leniter torta. **Theca** cylindrica, c. 2.0–2.1 mm. longa et c. 0.64 mm. crassa, erecta et stricta vel leniter arcuatula, subsymmetrica, fulva, leniter 8-plicata, brevicollis; cellulis exothecii rectangularis et plerumque collenchymaticis, c. 40–50 \times 20 μ magnis, ad orificium in seriebus 3–4 minutis subquadratis c. 15 μ magnis; stomatibus in collo sat numerosis. **Annulus** duplex, c. 40–45 μ altus, luteus. **Peristomii** dentes lineari-lanceolati, fere ad medium bifidi, c. 0.4–0.42 mm. longi et basi 60–70 μ lati, densiuscule articulati, obscure rubiginosi, inferne variolare striolati, superne dense papilloso, intus densiuscule et bene evolute trabeculati. **Spori** c. 18–20 μ , virides, minutissime et dense papilloso. **Operculum** e basi conicum fuscum longe oblique rostratum. c. 2 mm, longum, rostro subulato, apice obtuso, lutescenti-virescenti. **Calyptra** cucullata, c. 2.1 mm. longa, lutescenti-fusca, laevis. **Matur** aestate.

Sachalin (Coll. CHIKAJI TSUJINO! Auguste 1913.).

Nomen varietatis ab Sachalin.

A typo nervo folii latiore, peristomii dentibus superne dense papillosis differt.

Dicranum japonicum MITT.

Sachalin: Notoro (Coll. HIROSHI YOSHIDA! Augusto, 1913.).

Pilopogon Blunii (DOZ. ET MOLK.) BROTH.

Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima (Coll. S. NODUTE! Majo, 1913.).

Dicranodontium longiros'ra (STARK.) SCHIMP.

Sachalin: Notoro (Coll. HIROSHI YOSHIDA! Augusto, 1913.).

Leucobryaceae.***Leucobryum scabrum*** S. LAC.

Kyûshû: Prov. Ôsumi, Ôkachi, Amami-Ôshima (Coll. K. MIYAMOTO! Martio, 1912.).

Fissidentaceae.***Fissidens japonicus*** DOZ. ET MOLK.

Ryûkhû: in insula Okinawa (Coll. T. MIYAGI! Augusto 2, 1911.); Korea: Quelpaert (Coll. SANKI ICHIKAWA! 1905.).

Pottiaceae.***Leptodontium Nakaii*** SH. OKAMURA. sp. nov.

(Tab. V A-H.)

Habitatio ad rupes siccas in alpibus. Gracile, caespitosum, caespitibus laxiusculis lutescenti-viridibus nitidiusculis. **Caulis** repens vel decumbens, c. 15-25 mm. longus, rubiginosus, per totam longitudinem laxè fusco-radiculosus, parce (usque ad 4.) irregulariter ramosus, sectione subteres c. 0.16 mm. in diametro, fasciculo centrali nullo, reti paene a centro usque sensim minore et crassiore, intus areolas fere hexagonas praebente, cellulae strati superficialis multo minores; ramis erectis vel ascendentibus, strictis vel subcurvatis, usque ad 10 mm. longis, per totam longitudinem parce hyalino- vel fusco-radiculosus, simplicibus vel paulum (c. 1-2) ramulosis, laxiuscule foliosis. **Folia** sicca adpressa et vix crispata,

humida erecto-patentia vel e basi suberecta recurvata, oblongo-lanceolata apice breviter acuta, c. 0.9–1.2 mm. longa et c. 0.36–0.45 mm. lata, concava, marginibus utroque vel unilateralibus recurvis, apice remoto et grosse c. 8–13 serratis, rarius subintegerrimis; nervo valido, infra summum apicem folii evanido, luteis vel fuscis, ventro laevi, dorso fere ad basin dense papilloso, in sectione transversali plano-convexo, dorso valde prominenti, ventro subplana, c. 70μ lato et c. 42μ crasso, cellulis ventralibus 4, crassiusculis, ducibus medianis 3 majoribus, fasciculo stereidarum unistrato, cellulis dorsalibus c. 12 indistinctis; cellulis laminalibus quadoratis vel rotundato-hexagonis, utraque facie dense papillosis et subopacis, c. $12\text{--}14\mu$ magnis, apicalibus elongatis c. $20\text{--}28\mu$ longis et c. 9μ latis laevibus vel sublaevibus, basilaribus rectangularibus c. $15\text{--}28\mu$ longis et c. 12μ latis laevibus vel sublaevibus lutescentibus vel hyalinis, angularibus quadratis laevissimis. **Gemmae** nullæ, sed pili paraphysi-formes in axillæ foliorum siti. **Caetera** ignota.

Korea: Prov. Kyōng-san, Chananbow (alt. 1916 m.) in monte Chiri-san (Coll. TAKENOSHIN NAKAI! Julio 7. 1913.).

Nomen speciei in honorem Coll. Dr. T. NAKAI.

Species **L. Styritaco** (JUR.) LIMPR. vald affinis, sed gemmis nullis, nervo folii dorso dense papilloso jam abunde diversa.

Grimmiaceæ.

Rhacomitrium canescens BRID. *var. ericoides* (WEB.)

BR. EUR.

Korea: Prov. Kyōng-san, in monte Chirisan (Coll. TAKENOSHIN NAKAI! Julio 7, 1913.).

Orthotrichaceæ.

Ulota japonica (SULL. ET LESQ.) MITT. in Trans. Linn. Soc. London, 2nd ser. Bot. Vol. III. Part 3. p. 162 (1891); **Orthotrichum japonicum** SULL ET LESQ. in Proce. Amer. Acad. Art. and Scie. IV. p. 277 (1857–1860).

Sachalin: Notoro (Coll. HIROSHI YOSHIDA! Augusto, 1913.).

Macromitrium gymnostomum SULL. ET LESQ.

Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima (Coll. K. MIYAMOTO! October, 1910.).

Schistostegaceæ.

Schistostega osmundacea (DICKS.) MOHR. Bot. Taschen. p. 92. (1803); BRIDEL Bryologia univ. 1, p. 110 (1826); Bryol. eur. Vol. III. (1836-1851); ROTH Europ. Laubmoose I. p. 555 (1904); ENGLER u. PRANTL natur. Pflanzf. Musci p. 529, (1903).

(Tab. VI.)

Habitatio in lapidicinis saxi cryptisque arenariis aggerum cavitatibus. **Plantæ** tenerrimæ, gregariæ vel caespitosæ, caespitibus virescentibus saepe ferruginosis vel pallescenti-viridibus nitidiusculis molliusculis densiusculis; thallose præditæ diu persistente, nitorem smaragdinum exhibente. **Inflorescentia** dioica; planta masculina femineæ vel sterilitatis similis; flores utriusque sexus gemmiformes atque terminales; folia perigonalia 5-sticha, exteriora majora, interna minutiora, concava, oblonga; apice acuta, c. 0.36-0.54 mm. longa et c. 0.09-0.16 mm. lata; antheridia c. 5-6, c. 0.16 μ longa. **Caulis** erectus flexuoso-erectus vel leniter curvatus, basi rubiginoso-radiculosus, ad medium vel ultra rubiginosus et aphyllus; sed saepe minutissime remote et libere foliosus, e medio ad apicem virescens, c. 5-8 mm. alta, simplicissimus rarius apice innovando-ramosus; sectione teres c. 70-90 μ in diametro, fasciculo centrali c. 16-20 μ crasso, cellulis perpaucais (c. 5-6) composito, reti ceteroquin a centro usque 2-strati, cellulis intermediis subincrassatis saepe chlorophyllosis c. 16-24 μ magnis, cellulis superficialibus incrassatis saepe minores c. 8-13 μ magnis; foliatione diversa bifurcata, steriles e medio ad apicem frondiformes pinnatifida, fertiles ad basin apicis paulum pinnatifida vel pinnata saepe aphylla, sed aliquando steriles similis. **Folia** verticaliter cauli inserta, disticha, plana, ovato-lanceolata vel ovali-rhomboides apice breviter acuminata, basi decurrentia et connata; c. 0.8-1.0 mm. longa et c. 0.36-0.45 mm. lata, erecto-patentia, marginibus planis, integris vel rarius in acumen serrulatis; nervo nullo; cellulis rhombeis vel

rhomboideis, laxis, in medio folii c. 60–80–100 μ longis et c. 15–24 μ latis, superioribus et basilaribus brevioribus c. 60 μ longis, marginalibus elongatis angustis c. 120–180 μ longis et c. 12–14 μ latis, omnino leavissimis. **Bracteae perichaetii** 5-stichae, externae majores, internae minutiores, concavae, lanceolatae vel oblongo-lanceolatae, apice breve acuminatae, c. 0.6–1.0 mm. longae et c. 0.09–0.19 mm. latae, nerves, **Vaginula** ovalia vel oblonga, c. 0.36 mm. alta et c. 0.22 mm. crassa, lutea apice fusca, paraphysibus perpaucitas (c. 1–2), c. 0.18 mm. longa. **Seta** tenuissima, subhyalina, c. 5–7 mm. alta, substricta, laevissima, junior chlorophyllosa. **Theca** erecta, elliptica ovalia vel globoso-ovalia, deoperculate lati-stoma, junior virides maturitate luteo-fusca; cellulis exothecii collenchymaticus, hexagonis, c. 18–24 μ magnis, ad orificium in seriebus c. 5 minutis, marginalibus majoribus rectangulis vel quadratis; stomatibus nullis; columella oblongo-cylindrica, crassiuscula. **Spori** globosa, c. 8–10–13 μ magni, virides vel lutescenti-virides, maturi aprili vel majore. **Operculum** convexum, obtusum, brevissimum, c. 90 μ alta et 180 μ in diam., rubellum vel lutescenti-rubellum. **Calyptra** cylindrico-conica, nuda et laevis, fuscescens. c. 0.36 mm. longa et c. 0.12 mm. in diam. **Peristomium** 0.

Hondo: Prov. Shinano, Iwamurata, Kitasaka-gun (Coll. KAITARÔ KOYAMA! Maio 1912.); Akamatsu, Hata-mura, Higashi-chikuma-gun (Coll. TEISUKE YAGI! Junio 1, 1913.); Biwaike, Kamitakai-gun (Coll. HIROSHI SHIMURA! Junio 20, 1913.); Miyota-mura, Kitasaku-gun (Coll. KAITARÔ KOYAMA! Julio 21, 1913.); Koumi-mura, Minamisaku-gun (Coll. KAITARÔ KOYAMA! Julio 22, 1913.); Ariake-mura, Minamiadumi-gun (Coll. TEISUKE YAGI! Julio 28, 1913.).

Distr. Europa et America boreali.
Species nova ad floram japonicam.

Bryaceæ

Mniobryum nipponense SH. OKAMURA, Sp. nov.

(Tab. VII.)

Habitatio in aggeribus subhumidis. Plantæ robustiusculæ caespitosæ fulvæ haud nitidæ. **Inflorescentia** dioica; planta masculina femineæ similis, flores terminales geminiformes; folia perigonia intima ovalia apicè acuta, c. 0.64–0.8 mm. longa, concava, rosea; antheridia numerosa rosea; paraphysibus numerosis filiformibus 0.40–0.50 mm. longis, roseis. **Caulis** erectus, strictus, c. 1.5–2.0 cm. altus, per totam longitudinem sed ad apicem paulum fusco vel rubiginoso-radiculosus, roseus, simplex vel 1–2 innovando-ramosus, densiuscule foliosus, sectione pentagonus c. 0.24–0.64 mm. crassus, fasciculo centrali pluricellulari rotundato vel elliptico c. 0.16–0.24 mm. magno roseo vel hyalino, cellulis hexagonis 7–14 μ in diam., reti ceterum tenui roseo, cellulis hexagonis vel oblongo-hexagonis c. 20–40–60 μ magnis, cellulae strati superficialis mutto minores (c. 9–14 μ magnæ) subcrassiores. **Folia** sicca paulum adpressa, humida erecto-patentia, saepe rosea, subcarinato-concava, decurrentia; infima oblongo-lanceolata, apice breviter acuta, c. 1.6–2.0 mm. longa et c. 0.64–0.72 mm. lata, marginibus planis vel e basi ultra medium leniter vel fortiter recurvis et e medio ad apicem serrata; superiora majora e basi oblonga subutato-lanceolata, apice acuta, c. 3.8–4.3 mm. longa et c. 0.72 mm. lata, marginibus e basi ultra medium fortiter reflexis et e medio ad apicem serrata; nervo valido cum apice evanido, saepe roseo, in sectione transversali plano-convexo, dorso prominenti, basi c. 84 μ lato et c. 64–90 μ crasso, cellulis ventralibus 5–6, ducibus medianis 2 rarius 3, fasciculo comitum unistrato, stereideam uni- vel bi-strato, cellulis dorsalibus 7–12 composito; cellulis laminalibus linealibus, laevibus, chlorophyllosis; c. 70–160 μ longis et c. 7–9 μ lati, basilaribus laxioribus c. 9–14–20 μ latis et usque roseis, superioribus brevioribus c. 40–60 μ longis et c. 7–9 μ latis. **Bracteæ perichaetii** intimæ minores haud decurrentiæ concavæ, oblongo-subulatæ apice breviter attenuatæ, c. 1.6–1.9 mm. longæ et c. 0.5 mm. latæ, marginibus e

basi ultra medium recurvis, e medio ad apicem indistincte serrulatis; nervo cum apice evanido. **Vaginula** ovalio-cylindrica, c. 0.8–1.2 mm. longa, rosea; paraphysibus paucitas, filiformibus, c. 0.3 mm. longa, rosea. **Seta** c. 2.0–2.5 cm. longa, flexuosula, apice hamata, basi rubra dein lutescenti-rubra, leavis, sicca leniter torta. **Theca** pendula rarius horizontalis, symmetrica, oblonga et sub ore paulum contracta, deoperculata late ovalia, cum collo c. 2.4 mm. longa et c. 1.2–1.6 mm. crassa, fusca, haud nitida, laevis, collo longiore c. 0.8–1.0 mm. longo basi incrassato; cellulis exothecii collenchymaticis, hexagonis, c. 25–50 μ magnis, ad orificium minutis c. 14 μ magnis, parietibus flexuosis; stomatibus in collo sat numerosis, c. 50 μ magnis, cryptoporibus. **Annulus** duplex, c. 50–60 μ altus, lutescens vel hyalinus, deciduus. **Exostomii** dentes sublato-lanceolati apice attenuati, c. 0.4–0.45 mm. longi et basi c. 80–90 μ lati, lutei vel lutescentes, infime rubiginosi, haud limbati, inferne minute papilloso, superne grosse papilloso, intus dense (c. 35–40) lamellosi; **endostomium** lutescens, minutissime papillosum; corona basilaris medium dentium producta; processus dentium longitudinis, carinati, latiuscule perforati; cilia bina, bene evoluta, leniter nodulosa. **Spori** c. 10–15 μ magni, luteo-fusci, laeves, maturi Aprili. **Operculum** conicum vel convexo-conicum et apiculatum, c. 0.6–0.8 mm. longum et c. 0.8 mm. in diam., fuscum. **Calyptra** anguste cucullata apice attenuata, c. 2.1–2.4 mm. longa, rosea ad apicem nigrescens, laevis.

Hondo: Prov. Echû, Ôyama-mura, Kamishinkawa-gun. (Coll. HISAHIKO SASAOKA! Aprili 13, 1914.).

Species **M. columbico** affinis, sed statura robustiore, foliis apice breviter acutis, theca oblongo, collo longiore dignoscenda.

Rhodobryum Wichurae (BROTH.) BROTH.

Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima (Coll. S. NODUTE! Majo, 1913.).

Rhodobryum giganteum (HOOK.) PAR.

Korea: Quelpaert (Coll. SANKI ICHIKAWA! 1905.).

Mniaceæ.***Mnium Maximoviczii* LINDB.**

Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima (Coll. S. NODUTE! Majo, 1913.); Korea: Quelpaert (Coll. SANKI ICHIKAWA! 1905.).

Rhizogoniaceæ.***Rhizogonium spiniforme* (L.) BRUCH.**

Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima (Coll. K. MIYAMOTO! October 1909.).

Weberaceæ.

***Theridion lorifolia* CARD.** in Beihefte Bot. Centralblatt, Band XVII. p. 8. (1904).

Hondo: Prov. Ise, Matsubagawa, Anzaka, Nobori-mura, Suzuka-gun (Coll. HISAHIKO SASAOKA! December 4, 1913.).

Distr. Korea: Oue-san; Hondo: Prov. Kii, Kumano.

Polytrichaceæ.***Pogonatum inflexum* LINDB.**

Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima (Coll. K. MIYAMOTO! October, 1910.).

***Pogonatum contortum* (MENZ.) LESQ.**

Korea: Quelpaert (Coll. SANKI ICHIKAWA! 1905.).

***Polytrichum juniperinum* WILD.**

Sachalin: Iriwasan (散江) (Coll. TASAKU KITAHARA! Julio, 1913.); Notoro (Coll. HARUZÔ KOMATSU! Augusto, 1913.).

Climaciaceæ.***Climacium japonicum* LINDB.**

Korea: Quelpaert (Coll. SANKI ICHIKAWA! 1905.).

***Climacium dendroides* (DILL.) WEB. ET MOHR.**

Hondo: Prov. Hôki, Narumi-mura, Seihaku-gun (Coll. JUITSU KUSAJI! December 1913.).

Diese Art wurde schon von Herren BESCHERELLE,⁽¹⁾ SALMON⁽²⁾ und BROTHERUS⁽³⁾ zu unserer Flora beschrieben, aber die japanische Proben dieser Art waren mir unbekannt. Es freut mich sehr die Proben dieser Art aus Prov. Hôki zu bekommen. Übersicht der japanischen Arten dieser Gattung ist folgende: —

Clavis specierum japonicarum.

- | | | |
|---|---|--|
| { | Folia ramea parum plicata, basi vix auriculata, apice breviter acuta et subobtusa; nervo dorso superne haud serrulato. Theca ovato-oblonga, 1 : 2.5–3.0 magna. | C. dendroides (DILL.) WEB. ET MOHR. |
| | Folia ramea profunde plicata, basi grosse auriculata. Theca subcylindrica, 1 : 5–6 magna. | 1 |
| | Folia ramea breviter acuta; nervo dorso superne haud serrulato; ramis strictis, apice obtusis vel breviter acutis et subobtusis | C. americanum BRID. |
| { | Folia ramea longe acuta; nervo dorso superne distincte 2–6 serrulato; ramis apice usque attenuatis arcuatis, rarius obtusis. | C. japonicum LINDB. |

Leucodontaceæ.

***Oedocladium sinicum* MITT. var. *pilotrichelloides* CARD.**

Bull. Soc. Bot. Genève, 2^{me} Série, Vol. III. p. 275 (1911).

Kyûshû: Prov. Higo, in monte Akuso, Kuma-gun (Coll. YOSHIO NARITA! Aprili 24, 1910.).

Distr. Hondo: Prov. Aki, Miya-jima.

Neckeraceæ.

***Acrobryopsis assimilis* (CARD.) BROTH.**

Kyûshû: Prov. Ôsumi, in monte Yuwan, Amami-Ôshima

(1) M. E. BESCHERELLE:—Nouveaux documents pour la flore Bryologique du Japon. [Annales scie. nat. Bot. 7^e ser. tom. 17, p. 370. (1893).]

(2) E. S. SALMON:—On some Mosses from China and Japan. [Journ. Linn. Soc. Bot. p. 467. (1900)].

(3) V. F. BROTHERUS:—Engler und Plantl.—[Pflanzenfamilien, Musci, p. 735. (1905)].

(Coll. K. MIYAMOTO! Janus, 1909); Nase, Amami-Ôshima (Coll. S. NODUTE! Majo, 1913.).

***Aërobryopsis subdivergens* BROTH.**

Kyûshû: Prov. Ôsumi, in monte Yuwan, Amami-Ôshima (Coll. K. MIYAMOTO! October, 1909.).

***Barbella Determesii* (REN. ET CARD.) FLEISCH.**

Kyûshû: Prov. Satsuma (Coll. SHÔZÔ YAJIMA!).

***Barbella Determesii* (REN. ET CALD.) FLEISCH. var. *akusensis* SH. OKAMURA. var. nov.**

(Tab. VIII.)

Habitatio in truncis arborum sylvaticarum. **Plantæ** robustæ caespitosæ lutescenti-virides vel lutescenti-fuscae haud nigritæ nitidiusculæ. **Caulis** primalius elongatus, repens, filiformis; secundaris longe pendulus, usque ad 25 cm. longus, flexuosus, laxiuscule foliosis et teres, laxè pinnatim ramosus, sectione rotundato-ovalis, c. 0.24-0.32 × 0.16-0.24 mm. crassus, fasciculo centrali nullo, reti centrali hyalino, cellulis oblongo-hexagnis c. 15-20 μ in diam., periphaerico e cellulis lutescenti-fuscis pluriseriatis valde incrassatis composito; ramis divaricatis et pendulis, c. 1-9 cm, longis, densiuscule foliosis valde complanatis, acutis, simplicibus vel 1-4 ramulosis. **Folia caulina** sicca adpressa, humida erecta vel suberecta, breviter decurrentia, e basi amplexicauli cordato-lanceolata sensim in acumen elongatum filiformium subflexuosum attenuata, c. 3.0-3.4 mm. longa et c. 0.8 mm. lata, concava, enervia, marginibus ubique argute serratis; cellulis linearibus, dorso papilla singula medio notatis; **folia ramea** sicca et humida patentia, e basi ovato-oblonga apice sublato-acuminata, concava, enervia, marginibus basi recurvis, ad basin acuminis incurvis, ubique argute serratis; cellulis linearibus, laevibus vel sublaevibus, in medio folii c. 80-100 μ longis et c. 8-9 μ latis, superioribus c. 40-60 μ longis et c. 7 μ latis, basilaribus c. 40-56 μ longis et c. 10 μ latis luteis inter se porosis, alaribus quadratis rectangularis c. 15-22-30 μ longis et c. 15-20 μ latis lutescentibus. **Inflorescentia** dioica; flores feminei in ramis; masculi ignota. **Caetera** ignota.

Kyûshû: Prov. Higo, in monte Akuso, Kuma-gun (Coll. YOSHIO NARITA! Aprili 24, 1910.).

Nomen varietatis ab Mont. Akuso.

A typo foliis ramî brevioris et latioris acuminatis differt.

Meteoriella SH. OKAMURA. gen. nov.

Caulis primarius repens, filiformis; secundarius pendulus, pinnatim ramosus; ramis simplicibus vel ramulosis; caulibus secundariis ramis ramulisque densiuscule foliosis et teretibus. **Folia** e basi cordata erecta ovata elliptica vel rotundata, apice sublato-attenuata et recurvo-squarrosa, concava, auriculis parce circinatis caulem amplexis, marginibus ubique serratis; nervis binis brevibus; cellulis linearibus, laevibus, parietibus crassis minute porosis, infimis coloratis, alaribus nullis. **Caetera** ignota.

Genus **Meteoriopse** FLEISCH. valde affine, sed foliis auriculatis, nervis binis longe diversum.

Meteorium solutum, eine Art in den Meteorieen wurde schon von Herrn W. MITTEN beschrieben.⁽¹⁾ Vor mehreren Jahren habe ich Gelegenheit eine Proben ähnlich der obengenannten Art aus Kyûshû zu bekommen gehabt. Durch Untersuchungen dieser Proben denke ich mir, dass die eine neue Gattung bildet, wie Dr. V. F. BROTHNERUS schon gesagt hatte⁽²⁾; deshalb werde ich einen neuen Namen für diese Gattung geben, gegen diesen arten wie vorhergehenden.

Meteoriella soluta (MITT.) SH. OKAMURA. comb. nov.

syn. **Meteolium solutum** MITT. Musci Ind. orient. [Jour. the proce. Lin. Soc. Supp. Bot. Vol. I. p. 88 (1859)].

Distr. Sikkim.

Meteorilla soluta (MITT.) SH. OKAMURA. var. **Kudoï** SH. OKAMURA. n. var. (Tab. IX.)

Habitatio ad arborum truncos vel ramulos. **Plantae** lutescenti-virides vel fusco-aureæ saepe nigritæ, rigidiusculæ, nitidiusculæ.

(1) W. MITTEN:—Musci Indiae orientalis (Journal of the proceedings of the Linnean Society of London. supp. to Botany. Vol. I. p. 88 (1859).

(2) ENGLER und PLANTL:—Die natürlichen Pflanzen-familien, Musci p. 826-827 (1906).

Caulis primarius repens; secundarius pendulus, leniter flexuosus, c. 10–20 cm. longus, rubiginosus, densiuscule foliosus teres, laxiuscule et irregulariter pinnatim ramosus, sectione ellipticus, c. 0.24–0.32 × 0.16–0.20 mm. magnus, faciculo centrali nullo, reti centrali subrubiginoso, cellulis pentagonis vel hexagonis c. 20 μ in diametro, peripherico e cellulis rubiginosis 4–5-seriatis valde incrassatis composito; ramis 1–5 cm. longis, patulis vel patulis et pendulis, sicca arcuatis vel flexuosis, densiuscule foliosis teretibus, apice attenuatis vel obtusis, simplicibus vel 1–3-ramulosis; ramulis c. 1 cm. longis.

Folia sicca et humida aequiforma, e basi cordata erecta auriculata (auriculis parce circinatis caulem amplexis) ovata elliptica vel rotundata, apice subulato-attenuata, recurvo-squarrosa (acumine aliquando semitorta), c. 1.6–2.0 mm. longa et 0.8–0.9 mm. lata, valde concava, marginibus ubique distincte serrulatis, in acumen argute dentatis vel retro-serratis, ad basin acuminis incurvis; nervis binis, inaequalibus, distinctisve vel indistinctisve ad $\frac{1}{4}$ – $\frac{2}{7}$ evanidis, in sectione transversali basi e 2-stratis cellularum composito; cellulis linearibus, laevibus, basilaribus c. 25–40–50 × 7 μ magnis, parietibus crassis et minute porosis, infimis abbreviatis rubiginosis rectangularibus c. 10–25 × 8–10 μ , superioribus 28–45 × 4–5 μ , alaribus nullis. **Caetera** ignota.

Kyûshû; Prov. Ôsumi, ins. Yaku-shima (Coll. YÛSHUN KUDÔ! Augusto, 1908.); Prov. Higo, in monte Ichibusa (Coll. YOSHÛ NARITA! October 7, 1909.).

Nomen varietatis in Dom. KUDÔ honoren.

A typo serrae foliorum majores, in acumen argute et saepe dentatae vel retro-serratae differt.

Trachypus bicolor REINW. ET HORNSCH.

Hondo: Prov. Shinano, in monte Tateshina (Coll. ZENRYO ÔHINATA! Septembri 16, 1909.).

Species nova ad floram japonicam.

Distr. Sikkim, Neilgherr.; Ceylon; Sumatra; Java; Ceram; Celebes etc.

Bissetia lingulata (MITT.) BROTH. in ENGLER und PRANTL nat. Pflanzenfamilien, Musci p. 846–847 (1906); ***Neckera lingulata*** MITT. in Trans. Linn. Soc. Lond. 2nd. Ser. Bot. Vol. III. Part 3. p. 173 (1891).

Die Haube dieser Art ist noch nicht beschrieben, aber habe ich vor kurzer Zeit die Probe, die Herr ZENRYÔ ÔHINATA am 27 September 1911 in Arafune-yama, Prov. Sinano, gesammelt hatte, untersucht. Die Diagnose wie folget:—

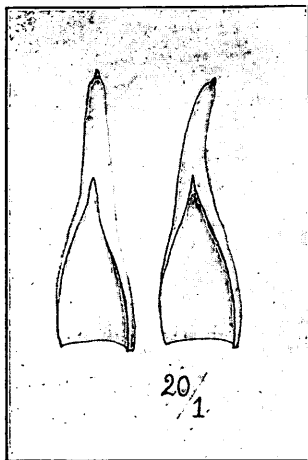


Fig. 1. *Bissetia lingulata*. Calyptra 20/1.

Calyptra cucullata, c. 2.0–2.2 mm. longa, lutescenti-virescens basi et apice fusca, lævis, nuda.

Hondo: Prov. Shinano, in monte Arafune, (Coll. ZENRYÔ ÔHINATA! Septembri 27, 1911.).

Distr. Hondo: Prov. Shimozuke, in monte Nikkô (Coll. BISSET!); Shikoku: Prov. Tosa, in monte Tsuetate-tôge (Coll. SH. OKAMURA! December 29, 1906.).

Homalia levidentata SH. OKAMURA. sp. nov.

(Tab. X. A–H.)

Habitatio ad arborum truncos. Subgracilis, cæspitosa, cæspitibus viridibus vel luteo-viridibus nitidiusculis densis. **Caulis** prostratus c. 3–5 cm. longus, hic illic fasciculatim fusco-radiculosus, dense pinnatim ramosus, sectione ellipticus c. 0.28×0.20 mm. magnus, fasciculo centrali nullo, reti hyalino, cellulis hexagonis c. 15 μ , peripherico e cellulis 5–6-seriatis valde incrassatis luteis composito; ramis prostratis, c. 1.–1.5 cm. longis (rarius ad 3 cm. longis.), obtusis, cum foliis 1,5–2,0 mm. latis, simplicibus vel parce (1–3) ramulosis; ramulis brevis, ad 5 mm. longis; caulibus ramis ramulisque dense foliosis valde complanatis. **Folia** sicca immutata, imbricata, planiuscula, asymmetrica, vix decurrentia, e basi contracta obovata vel fere rotundata, apice rotundato-obtusa, c. 0.96–1.0 mm. longa et c. 0.64–0.75 mm. lata, integerrima, margine uno latere ad basin auriculata, auricula inflexa semirotondata vel semiovata c. 0.2–0.25×0.16 mm. magna; nervo nullo; cellulis valde chlorophyllosis, lævibus, parietibus crassiusculis, basilaribus ad medium folii subellipticis c. 28–40 μ longis et c. 5–7 μ

latis, in medio folii rhombeis, superioribus et marginalibus rotundatis subrotundatis vel quadrato-rotundatis c. $7-10\mu$ magnis vel saepe ellipticis c. $10-14\mu$ longis et c. 7μ latis, in auricula rotundatis vel subrotundatis minoribus c. $5-7\mu$ magnis. **Inflorescentia** dioica, **Ramulus perichætialis** in ramis, haud radiculosus. **Bracteae perichætii** externae asymmetricae, e basi subauriculatae et ovatae vel oblongae longe lingulatae, apice rotundato-obtusae vel late rotundato-acutae erectae vel reflexae integerrimae; intimae subsymmetricae, e basi vaginante longe lingulatae, apice rotundato-obtusae vel late acutae, c. 1.5–1.6 mm. longae, integerrimae, erectae vel reflexae saepe homomallae; nervis binis brevibus et indistinctis vel nullis; cellulis valde chlorophyllosis, parietibus crassiusculis, basilaribus rectangularibus vel linearibus c. $30-70\mu$ longis et c. $9-11\mu$ latis, ad medium folii rhomboideis c. $30-40\mu$ longis et c. $7-9\mu$ latis, superioribus rhombeis c. 20μ longis et c. 9μ latis. **Vaginula** cylindrica, c. 0.8 mm. alta, lutescenti-cinerea; paraphysibus numerosis, c. 1.2 mm. longis, hyalinis. **Seta** 2.0–2.5 mm. longa, stricta vel leniter curvata, rubiginosa, laevis, sicca torta. **Theca** erecta, symmetrica, ovato-oblonga vel oblonga, c. 0.1–1.2 mm. longa et c. 0.56–0.64 mm. crassa, castanea, laevis, brevicollis; cellulis exothecii quadratis vel rectangularis c. $35-56 \times 20-35\mu$ magnis, ad orificium in seriebus 4–5 transverse rectangularis c. $10-15 \times 15-20\mu$ magnis; stomatibus nullis. **Exostomii** dentes lineari-lanceolati, basi connati, c. 0.2 mm. longi et basi 56μ lati, linea media flexuosula et aliquando hic illic fissi, dorso haud striatuli per totam longitudinem laevi lutescenti vel fere hyalino, ventre c. 15 valde humiliter lamelloso: **endostomium?**. **Spori** $15-20\mu$ magni, virides, laeves. **Cætera** ignota.

Hondo: Prov. Idumo, Kiyomidudera (Coll. MASAYOSHI NAKAJI! Martio 13, 1913.).

Nomen speciei ab peristomio dentibus laevibus.

Species **H. Targioniano** GOUGH. affinis, sed statura minore, seta brevior, peristomii dentibus laevibus jam abunde diversa.

Homaliodendron scalpellifolium (MITT.) FLEISCH.

Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima. (Coll. S. NODUTE! Majo, 1913.).

Thamnium Fauriei BROTH. ET PARIS.

Kyûshû: Prov. Ôsumi, Ôkachi, Amami-Ôshima (Coll. K. MIYAMOTO! Martio, 1911.).

Lembophyllaceae,***Isothecium diversiforme*** (MITT.) BESCH.

Korea: Quelpært (Coll. SANKI ICHIKAWA! 1905.).

Entodontaceae.***Entodon Andôi*** SH. OKAMURA. sp. nov.

(Tab. XI.)

Habitatio ad rupes irrigatas. Robustus, caespitosus, caespitibus læte viridibus nitidiusculis laxis densiusculis molliusculis. **Inflorescentia** monoica, flores utriusque sexus in caule. **Caulis** elongatus, repens, c. 15 cm. longus, apice sæpe flagelliformiter productus et leniter arcuatus, densiuscule pinnatim ramosus, sectione ovalis, c. $0.28-0.40 \times 0.2-0.24$ mm. crassus, fasciculo centrali nullo, reti centrali hyalino tenero, cellulis hexagonis c. $15-20\mu$ in diametro, peripherico e cellulis tenellis minoribus composito; ramis prostratis, plerumque simplicibus c. 2.-2.5 cm. sæpe c. 6-8 cm. longis, cuspidatis vel attenuatis, rarius 1-3 ramulosis, aliquando flagelliformiter productis et laxiuscule pinnatim ramulosis, densiuscule foliosis et valde complanatis, cum foliis c. 2.0-2.5 mm. latis, sed sæpe nudis, hic illic fasciculatim fusciscenti-radiculosis; ramulis c. 1.-1.5 cm. longis, cuspidatis vel breviter attenuatis. **Folia** sicca laxè adpressa, humida erecto-patentia, haud decurrentia, e basi valde contracta oblonga, apice subito breviorè latiorè acuta, c. 1.4-1.7 mm. longa et 0.6-0.8 mm. lata, valde concava, marginibus e basi recurvis dein ad basin apicis incurvis, apice minutissime serrulatis; nervis binis, tenuibus, brevibus c. 0.32-0.48 mm. longis; cellulis valde chlorophyllosis, prosenchymaticis, c. $60-90\mu$ longis et c. $6-7\mu$ latis, superioribus rhomboideis c. $20-30\mu$ longis et c. 7μ latis, basilaribus laxiusculis c. $42-56\mu$ longis et c. $7-9\mu$ latis, alaribus

numerosis quadratis vel rectangularibus c. 20–30 μ longis et c. 20 μ latis hyalinis vel fuscis. **Bractæ perichaetii** externæ e basi erectæ patulæ vel recurvatæ; internæ sublato-lanceolatae apice breviter acuminatae (acuminibus suberectis vel leniter recurvatis), c. 0.3 mm. longæ, concaviusclæ, integræ; nervis binis obsoletis vel nullis; cellulis linearibus, c. 110–140 μ longis et c. 7 μ latis, basilari-bus laxioribus rectangularibus c. 50–80 μ longis et c. 15 μ latis. **Va-ginula** cylindrica, c. 1.6 mm. alta. **Seta** c. 1.5–1.7 cm. alta, erecta et leniter flexuosa, rubra, lævis sicca torta. **Theca** erecta, oblongo-cylindrica, cum collo c. 3. mm. longa (collo 0.7 mm. longo) et c. 0.9 mm. crassa, castanea, lævis; cellulis exotheci hexagonis vel rectangulis, c. 30–40 μ longis et c. 30 μ latis, ad orificium in seriëbus duabus minutis c. 15 μ ; stomatibus in collo paucitibus. **Annulus** c. 70 μ latus, lutescenti-fuscus. **Exostomii** dentes lineari-lanceolati, c. 0.4–0.48 mm. longi et basi c. 0.07 mm. lati, basi rubiginosi transverse striati, dein longitudinaliter striolati, apice lutescenti-fusci læves vel sublæves, intus c. 20 lamellosi lutei; **endostomium** processus dentium fere longitudinis, carinati in carina anguste perforati, lutei, læves. **Spori** c. 15 μ virides, læves. **Oper-culum** e basi conicum longe et parce oblique rostratum (rostro obtuso), c. 1 mm. longum et c. 0.56 mm. in diam. **Calyptra** cuculata, c. 2.4–2.8 mm. longa, viridula vel fuscescens. **Matur** october.

Hondo: Prov. Hidachi, Togyokusen in Tokiwa-hortum, Mito-shi (Coll. ISAKU ANDÔ! November, 1911; Septembri 12, 1912; October 17, 1913.).

Nomen speciei in honorem Coll. Dom. I. ANÔ.

Species a congeneribus statur robustiore, foliorum forma etc. faciliter dignoscenda.

Entodon Ôhinatæ SH. OKAMURA. sp. nov.

(Tab. XII.)

Habitatio in truncis arborum silvaticarum. Robustiusculus, cæspitosus, cæspitibus laxiusculis nitidiusculis lutescenti-viridibus vel pallido-viridibus. **Inflorescentia** monoïca. **Caulis** prostratus, c. 2–4 cm. longus, parce rubiginoso-radiculosus, laxè vel densiuscule

irregulariter ramosus, sectione ovalis, c. 0.32×0.2 mm. crassus, fasciculo centrali paucicellulari, reti intermedio hyalino, cellulis hexagonis c. $15-28\mu$ in diametro, peripherico e cellulis viridibus vel lutescenti-fuscis 4-5-seriatis valde incrassatis composito; ramis ascendentibus usque ad 25 mm. longis, strictis vel arcuatis, obtusis vel breviter attenuatis, simplicibus rarius 1-2 ramulosis; ramulis usque ad 5 mm. longis; caulibus ramisque dens foliosis valde complanatis. **Folia** sicca adpressa, humida erecto-patentia, imbricata, haud decurrentia, oblongo-lanceolata apice acuminata, c. 1.8-2.2 mm. longa et c. 0.7-0.85 mm. lata, valde concava, marginibus e basi late recurvis dein ad basin acuminis planis, in parte acuminata argute serratis; nervis binis, æqualibus, c. 0.2-0.56 mm. longis, tenuibus, in sectione transversali e 3-striatis cellularum composito; cellulis linearibus, c. $56-70\mu$ longis et c. $4-6\mu$ latis, lævibus, basilaribus laxioribus c. $30-40\mu$ longis et c. $7-11\mu$ latis, inter se porosis, alaribus sat numerosis quadratis c. 20μ hyalinis vel viridibus. **Ramulus perichætialis** in caule et ramis, parce radiculosus. **Bracteæ perichætii** intimæ e basi alte vaginante sensim anguste subulatæ, integræ; nervo indistincto, rarius distincto c. 0.8 mm. longo; cellulis basilaribus laxi rectangularibus. **Vaginula** cylindrica, c. 1.4 mm. longa, lutescenti-fusca; paraphysibus paucitas. **Seta** c. 18-20 mm. alta, erecta, stricta, sicca torta, rubura superne lutescenti-rubura, lævis. **Theca** erecta, oblong-cylindrica, symmetrica, c. 2.4 mm. longa et c. 0.8 mm. in diam., castanea, brevicollis, collo c. 0.4 mm. longo; cellulis exothecii hexagonis vel oblongo-hexagonis, c. $20-30-45\mu$ longis et c. $15-20\mu$ latis, ad orificium in seriebus 1-2 minutis c. 15μ ; stomatibus in collo paucitibus. **Annulus** simplex, c. 70μ altus, rubiginosus. **Exostomii** dentes basi remoti, lineari-lanceolati, c. 0.44 mm. longi et basi 50μ lati, rubiginosi, basi læves apice papilloso, intus densiuscule (c. 25-30) et alte lamellosi; **endostomium** processus lineari-lanceolati, c. 0.15-0.20 mm. longi, carinati in carina vix perforati vel haud perforati, lutescenti-fusci minutissime papilloso. **Spori** c. 20μ , lutei, minutissime papilloso. **Operculum** e basi conicum longe rostratum, c. 0.8 mm. longum, rostro stricto cylindrico. **Calyptra**

cuculata, c. 2.8 mm. longa, dimidiam partem thecae obtegens, lutescenti-viridis apice fusca. **Matur** auctumno.

Hondo: Prov. Shinano, in monte Arafune (Coll. ZENRYÔ ÔHINATA! Septembri 27, 1910.).

Nomen speciei in honorem Coll. Don. Z. ÔHINATA.

Species distinctissima, a congeneribus peristomii structura faciliter dignoscenda.

Hypopterygiaceae.

Hypopterygium tenellum C. MÜLL. in Bot. Zeit. (1854) p. 557.

Syn ***H. ceylanicum*** MITT. in Musci Ind. ori. p. 148 (1859.); ***H. rotulatum*** MONT.

Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima (Coll. S. NODUTE! Majo 1013.).

Species nova ad floram japonicam.

Distr. In monte Nilghi; Ceylan; Java.

Hypopterygium japonicum MITT.

Korea: Quelpært (Coll. SANKI ICHIKAWA! 1905.).

Rhacopilaceae.

Rhacopilium aristatum MITT.

Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima (Coll. NODUTE! Majo, 1913.).

Leskeaceae.

Miyabea rotundifolia CARD. in Bulletin de l'Herbier Boissier, Tome IX. No. 3. p. 132. (1909.).

Hondo: Prov. Idumo, Kiyomidudera (Coll. JITSU KUSAJI! Janus 1914 et MASAYOSHI NAKAJI! Martio 13, 1914.).

Species nova ad floram japonicam.

Distr. Korea.

Haplohymenium Nakajii SH. OKAMURA. sp. nov.

(Tab. X. I-N.)

Habitatio ad truncos. Tenellum, caespitosum, caespitibus viridibus vel lutescenti-viridibus haud nitidis digidiusculis. **Caulis** repens; c. 3–4 cm. longus, hic illic fasciculatim fusco-radiculosus, densiuscule ramosus, sectione ellipticus c. 0.2×0.15 mm. crassus, reti centrali hyalino, cellulis hexagonis c. 14μ in diam. tenellis, peripherico e cellulis lutescentis vel fuscis minoribus composito; ramis 5–10–15 mm. longis, simplicibus vel pinnatim ramulosis; ramulis c. 2–7 mm. longis; ramis ramulisque dense foliosis obtusis. **Folia** sicca valde adpressa, humida patentia, fragiles, e basi late ovata vel ovata subito elongate ligulata, apice rotundato-obtusa vel obtusiuscula, c. 0.6–0.9 mm. longa et basi c. 0.3–0.4 mm. lata, in parte ligulata canaliculata c. 0.12–0.16 mm. lata, marginibus erectis integris in parte ligulata transverse rugulosis; nervo medio evanido viridi; cellulis hexagonis, c. $9\text{--}12\mu$, valde chlorophyllosis, utraque facie densiuscule papillosis, basilaribus ad nervum anguste ellipticis rectangulis vel linearibus c. $20\text{--}30\mu$ longis et $5\text{--}7\mu$ latis. **Cætera** ignota.

Hondo: Prov. Hōki, in monte Awashima (Coll. MASAYOSHI NAKAJI! October 31, 1913.).

Nomen speciei in honorem Coll. Dom. M. NAKAJI.

Species **H. Okamura** CARD proxima, sed plantæ tenelliores, folia apice elongate ligulata et rotundato-obtusa vel obtusiuscula dignoscenda.

Thuidium japonicum DOZ. ET MOLK.

Kyūshū: Prov. Ōsumi, Nase, Amami-Ōshima (Coll. S. NODUTE! Majo, 1913.).

Boulaya latifolia SH. OKAMURA. sp. nov.

(Tab. XIX.)

Habitatio in terra irrorata. Subrobusta, caespitosa, caespitibus depressis ochraceis vel fusciscentibus rigidis. **Caulis** prostratus, elongatus, c. 5–8 cm. longus, hic illic fasciculatim fusco- vel rubiginoso-radiculosus, laxè pinnatim ramosus, sectione ellipticus

c. $0.40-0.48 \times 0.32-0.40$ mm. magnus, fasciculo centrali nullo, reti hyalino, cellulis rotundato- vel oblongo-hexagonis c. $15-20\mu$ magnis, peripherico e cellulis 5-6-seriatis minoribus c. $7-10\mu$ magnis valde incrassatis rubiginosis composito; ramis patentibus, prostratis c. 2-3 cm. longis, radiculosus, dense pinnatim ramulosis; ramulis brevis, vix 5 mm. longis, patentibus vel saepe suberectis, strictis vel curvatis, siccitate teretibus, plerumque obtusis; caulibus ramis ramulisque dense foliosis. **Paraphyllia** numerosa, multiforma, plerumque 2- multi-fida. **Folia** caulina sicca adpressa imbricata, humida erecto-patentia, valde concava, plicata, e basi breviter decurrentia late cordata, in acumen subulatum apice elongatum subpiliforme abrupte constricta, c. 1.1-1.3 mm. longa et c. 0.9-1.0 mm. lata, marginibus integerrimis, basi late reflexis; nervo basi crasso, superne tenuiore, ad basin acuminibus evanido, rufescente, in sectione transversali plano-convexo dorso valde prominenti, basi e 4-stratis cellularum composito; cellulis minutissime 1-2 papillois haud opacis, parietibus inaequaliter incrassatis. c. $2-5\mu$ latis, luminibus angustiusculis ad nervum c. $7-10\mu$ longis et c. $2-5\mu$ latis, basilaribus c. $15-20\mu$ longis et c. $3-5\mu$ latis rubiginosis, ad margina rotundatis subquadratis vel ellipticis et saepe in seriebus obliquis dispositis c. $7-10\mu$ magnis, alaribus subrotundatis vel subquadratis c. 7μ magnis, superioribus oblongis; folia ramulina sicca adpressa imbricata, humida erecto-patentia vel patentia, concava, haud plicata, e basi breviter decurrentia cordato-ovata vel oblongo-ovata breve et late acuta, obtusa vel subobtusa, c. 0.8 mm. longa et c. $0.48-0.52$ mm. lata, marginibus integerrimis, leniter reflexis vel planis; nervo valido, ad $\frac{1}{3}$ evanido, rubiginoso; cellulis minutissime 1-2 papillois haud opacis, parietibus inaequaliter incrassatis c. $2-3\mu$ latis, luminibus latiusculis quadratis vel ellipticis c. $7-10\mu$ longis et c. 7μ latis, basilaribus ad nervum longioribus c. $10-18\mu$ longis et c. $4-7\mu$ latis rubiginosis, alaribus quadratis vel subquadratis, superioribus quadratis vel ellipticis c. $10-15\mu$ longis et c. $5-7\mu$ latis. **Cætera** ignota.

Hondo: Prov. Rikuchû, in monte Sukawadake, Nishiiwagun (Coll. YOSHÏÔ CHIBA! Augusto 18, 1912.).

Habitus statura faciesque omnino **B. Mitenii** (BROTH.) CARD. affinis, sed e foliorum formis et cellulis areolatis diversis.

Boulaya Mitteni (BROTH.) CARD. in Rev. Bryologique. 39^e Année. No. 1. p. 1-3, (1912).

Korea: Quelpært (Coll. SANKI ICHIKAWA! 1012).

Hypnaceæ.

Hypnamblystegium latifolium SH. OKAMURA. sp. nov.

(Tab. XIII.)

Habitatio in terra irrorata. Subrobustum, caespitosum, caespitibus mollibus sed sicca rigidiusculis lutescenti-viridibus haud nitidis densis. **Caulis** prostratus, elongatus, ad 8 cm. longus, parce fusco-radiculosus, dense pinnatim ramosus, sectione rotundatus vel ellipticus c. 0.30-0.45 mm. in diametro, fasciculo centrali c. 20-30 μ magno, reti intermedio hyalino, cellulis oblongo-hexagonis vel hexagonis tenuibus c. 15-40 μ magnis, a centro usque sensim minoribus, peripherico e cellulis 3-4 seriatis luteis vel luteo-fuscis c. 10 μ magnis incrassatis composito; ramis usque erectis, c. 2-4 cm. longis, apice acutis et sicca curvatulis humida usque strictis, simplicibus vel plus vel minus minutissime ramulosis; ramulis homomallis c. 2-6 mm. longis; ramulis in caule 5-10 mm. longis; erectis simplicibus; caulibus ramis ramulisque laxiuscule foliosus. **Paraphyllia** numeroſa, multiforma (lanceolata ovata ovato-lanceolata subulata etc.) integerrima vel serrata saepe bifida, 0.4-0.5 mm. longa. **Folia** sicca laxè adpressa et leniter crispata, humida suberecta vel erecto-potentia, valde concava, e basi perdecurentia deltoïdo-cordata, in acumen subulatum subcanaliculatim breve attenuatum constricta, c. 1.2-1.5 mm. longa et c. 1.0-1.3 mm. lata, marginibus planis, integerrimis vel ubique minutissime serrulatis, alis valde laxis et valde concavis; nervo valido, infra summum apicem folii evanidò, leniter flexuoso, luteo, basi c. 0.1-0.12 mm. lato et c. 0.04-0.05 mm. crasso, in sectione transversali biconvex vel planoconvex, dorso valde prominenti basi e 4-stratis cellularum incrassatarum composito; cellulis laminalibus laevibus,

valde chlorophyllosis, utriculo primordiali distincto, in medio folii rectangulis rhombeis vel rhomboideis c. $15-30\mu$ longis et c. $7-9\mu$ latis, superioribus rhomboides c. $20-30\mu$ longis et c. $5-7\mu$ latis, basiraribus laxis c. $30-60\mu$ longis et c. $15-20\mu$ latis hyalinis, alaribus valde laxis plerumque rectanglaribus c. $30-70\mu$ longis et c. $15-25\mu$ latis hyalinis; folia ramulia concava, oblongo-lanceolata, apice acuta, c. $0.48-0.64$ mm. longa et c. $0.16-0.2$ mm. lata, marginibus planis, integerrimis vel minutissime serrulatis, nervo infra summum apicem folii evanido; folia ramulia in caule concava, ovato-lanceolata, apice longe attenuata, c. $0.7-0.9$ mm. longa et c. $0.3-0.37$ mm. lata, marginibus planis, integerrimis vel minutissime serrulatis, nervo infra summum apicem evanido.

Cætera ignota.

Hondo: Prov. Shinano, Uryû-zaka, Fuse-mura, Kitasaku-gun (ZENRYÔ ÔHINATA! Martio 25, 1900.)

Species **H. filiciano** (L.) LOESK. proxima, sed statura robustiore, foliis latioribus, deltoido-cordatis, in acumen sublatum breve attenuatum constrictis facillime dignoscenda.

Calliergon Kawaguchii SH. OKAMURA. sp. nov.

(Tab. I. H-M.)

Plantæ aquatiles, robustae, caespitosæ, caespitibus laete viridibus inferne lutescenti-fuscis nitidiusculis densiusculis sicca rigidiusculis. **Caulis** elongatus, repens, lutescenti-viridis, hic illic rubiginoso-radiculosus; dense ramosus, sectione teres c. $0.4-0.7$ mm. in diametro, fasciculo centrali pluricellulari veterrimo fusco, reti ceteroquin paene a centro usque sensim minore et crassiore, intus areolas fere hexagonis, periphericum in stratis 2-3 minorissimis; ramis prostratis, viridibus, c. $5-8$ cm. longis, obtusis vel breve attenuatis, simplicibus vel parce irregulariter pinnatim ramulosis; ramulis c. $5-6$ mm. longis, obtusis, plerumque simplicibus; ramis ramulisque dense foliosis subcomplanatis. **Folia** sicca laxè adpressa et leniter longitudinaliter plicata, humida erecto-patentia et laevis, longe et late decurrentia, deltoido-cordata, apice acuta et saepe leniter spiraliter contorta, c. 1.8 mm. longa et c. $1.4-1.6$ mm. lata, cochleariforme concava, marginibus planis, ubique argute serratis; nervo vadido, ad $\frac{4}{5}$ evanido, rarius 1-nervuloso, in sectione

transversali plano-convexo dorso prominenti, e cellularum uniformium stratis 4 composito, cellulis ventralibus c. 7, cellulis dorsalibus c. 13; cellulis laminalibus linearibus, valde chlorophyllosis. in medio folii c. 100–120 μ longis et c. 6–8 μ latis, apice brevioribus c. 28–40 μ longis et c. 7 μ latis, basilaribus c. 70 μ longis et c. 15 μ latis saepe fuscis inter se porosis, in alis foliorum concavis et oblique limitatis rectenglaribus c. 56–84–130 μ longis et c. 20–35 μ latis hyalinis vel parce chlorophyllosis. **Cætera** ignota.

Hondo: Prov. Shimoduke, Jigokujaya, Chûzenji (Coll. KIYOSHI KAWAGUCHI! Augusto 6, 1913.)

Homen speciei in honorem Coll. Dom. K. KAWAGUCHI.

Species **C. giganteo** subaffinis, sed foliis deltoide-cordatis apice acutis diversa.

Hygrohypnum cordifolium SH. OKAMURA. sp. nov.

(Tab. XIV.)

Habitatio in terra irrorata. **Planta** habitu **Oxyrrhynchio rusciformi** similis. Robustiusculum, caespitosum, caespitibus lutescenti-viridibus vel fusco-lutescens nitidis densis rigidiusculis. **Inflorescentia** monoica; flores utriusque sexus in ramis. **Caulis** repens, fusco-radiculosus, densissime ramosus, sectione rotundatus, c. 0.2 mm. in diametro, fasciculo centrali nullo, reti centrali hyalino, cellulis hexagonis c. 14 μ in diam., peripherico e cellulis rubiginosis valde incrassatis pluriseriatis composito; ramis erectis, c. 15–20 mm. altis, e basi nudis sensim dense imbricatum foliosis et teretibus, irregulariter ramulosis; ramulis 5–10 mm. longis. erecto-patentibus, ramis ramulisque obtusis. **Folia** sicca laxè adpressa, humida erecto-patentia, haud homomallula, inferiora minuta, superiora sensim majora, breviter decurrentia, e basi contracta cordata vel rotundato-cordata, apice rotundato-obtusa vel brevior et latiore acuta saepe recurvata, c. 1.0–1.4 mm. longa et c. 0.9–1.4 mm. lata, concava, subplicata, marginibus basi recurvis dein planis, supra medium minute serrulatis, alis concavis; nervo ultra medium evanido, furcato, c. 0.8 mm. longo, in sectione transversali plano-convexo, basi e 2-stratis cellularum composito, c. 24 μ crasso; cellulis angustissime linearibus, laevibus, parietibus,

crassis, c. 42–60 μ longis et c. 5–7 μ latis, basilaribus laxioribus c. 9 μ latis luteis haud porosis, alaribus quadratis vel rectangularibus, c. 28–40 μ longis et c. 20 μ latis, hyalinis luteis vel fuscis, superioribus 15–30 μ longis. **Ramulus perichætialis** haud radiculosus. **Bracteæ perichætii** intimae erectae, e basi semivaginante breviter acutæ, c. 2.2–2.4 mm. longæ, longitudinaliter 3–4 plicatæ, apice serrulatæ, nervo indistincto medium evanido vel nullo; cellulis linealibus. **Vaginula** cylindrica, c. 1.2–1.6 mm. alta, fusca apice nigra; paraphysibus numerosis, hyalinis. **Seta** c. 1.2–1.4 cm. longa, erecta, stricta vel flexuosa, basi rubra, apice lutescenti-rubra, laevissima, sicca torta. **Theca** horizontalis vel inclinata, oblonga et parce ventricosa, brevicollis, c. 1.4–1.7 mm. longa et c. 0.8–0.9 mm. in diam., laevis, lutescenti-fusca; cellulis exothecii oblongo-hexagonis vel rectangularis, c. 30–40 μ longis et c. 15–20 μ latis, ad orificium rotundato-hexagonis, stomatibus nullis. **Annulus** triplex, c. 56 μ latus, fuscus. **Exostomii** dentes sublanceolati, c. 0.40 mm. longi et basi c. 84 μ lati, lutei, basi transverse striatuli, dein papilloso, apice saepe laeves, hyaline limbati, denes (c. 35–40) lamellati; **endostomium** luteum minute papillosum; corona basilaris 0.15 mm. alta; processus dentium longitudinis, carinati in carina anguste perforati; cilia bina brevia, hyalina, papillosa. **Spori** c. 15–20–24 μ , virides, laeves. **Operculum** rotundato-conicum, acute apiculatum, c. 0.45 mm. longum et c. 0.72 mm. in diam. **Calyptra** cucullata, c. 1.6 mm. longa, lutescenti-viridis, apice fusca, laevis. **Mature** aestate.

Hondo: Prov. Shinano, in monte Yarigadake (Coll. ZENRYÔ ÔHINATA! Augusto 11, 1913.).

Nomen speciei ab forma folii.

Species distinctissima, a congeneribus foliorum forma jam raptim cognoscenda.

***Campylium elodes* (SPRUCE) BROTH.**

Hondo: Prov. Hidachi, Isozaki (Coll. ISAKU ANDÔ! Majo 2, 1911.).

Species nova ad floram japonicam.

Distr. Europa: Asia: Himalaya.

Ctenidium hastile (MITT.) BROTH.

Korea: Quelpært (Coll. SANKI ICHIKAWA! 1905.).

Rhytidium rugosum (EHRH.) KINDE.

Korea: Prov. Kyöng-san, in monte Chiri-san (Coll. TAKENOSHIN NAKAI! Julio 7, 1913.).

Hylocomium himalayanicum (MITT.) JAEG.

Korea: Quelpært (Coll. SANKI ICHIKAWA! 1905.).

Hypnum Schreberi WILD.

Korea: Prov. Kyöng-san, in monte Chiri-san (Coll. TAKENOSHIN NAKAI! Julio 7, 1913.).

Ectropothecium rotundifolium SH. OKAMURA. sp. nov.

(Tab. XV.)

Habitatio ad rupes humidas. Robustum, caespitosum, caespitibus mollibus lutescenti-viridibus vel fusco-viridibus nitidiusculis laxiusculis. **Inflorescentia** monoica, flores masculi in ramis. **Caulis** prostratus, elongatus, c. 4–7 cm. longus, irregulariter pinnatim ramosus, hic illic fasciculatim fusco-radiculosus, sectione rotundus, c. 0.3–0.4 mm. in diametro; fasciculo centrali arto, reti intermedio hyalino, cellulis hexagonis tenellis, peripherico e cellulis tenello minoribus composito; ramis prostratis, 5–10–30 mm. longis, cum foliis c. 2.–2.5 mm. latis, obtusis, simplicibus vel irregulariter pinnatim ramulosis; caulibus ramisque dense et valde complanate foliosis. **Folia** sicca vix crispata leniter patentia, humida erecto-patentia vel patentia, haud homomallula, asymmetrica, concava, haud decurrentia, marginibus planis, apice minute serrulatis; folia dorsalia disticha, rotundato-elliptica vel rotundato-ovata apice apiculata, c. 0.9–1.3 mm. longa et c. 0.8–1.0 mm. lata; folia lateralibus oblonga apice breviter acuminata vel acuta, c. 0.8–1.3 mm. longa et c. 0.8–0.9 mm. lata, folia ventralia oblongo-lanceolata vel ovato-lanceolata apice breviter acuminata, c. 0.8–0.96 mm. longa et c. 0.4–0.56 mm. lata; nervis binis, c. 0.32–0.56 mm. longis, infra medium folii evanidis; cellulis chlorophyllois, laevissimis, breviter prosenchymaticis, (parietibus angustis plerumque fuscis, utriculo

primordiali distincto.) c. $56-84\mu$ longis et c. $15-20\mu$ latis, basilaribus laxioribus, rectangularibus, c. $20-50\mu$ longis et c. 20μ latis, alaribus indistictis quadratis vel rectangularibus chlorophyllosis, superioribus rhombeis vel breviter rhomboideis, c. $28-40\mu$ longis et c. $15-20\mu$ latis. **Ramulus perichæticalis** radiculosus. **Bractæ perichæctii** intimæ basi semivaginantæ deltoïdo-ovatæ sensim elongatæ attenuatæ, integerrimæ vel crenulatæ, enerves. **Vaginula** cylindrica, c. 0.8 mm. alta, fusca; paraphysibus numerosis; archegonia numerosa. **Seta** c. 10-12 mm. alta, flexuosula, rubura, lævissima. **Theca** inclinata vel horizontalis, symmetrica, oblonga, c. 1.2-1.6 mm. longa et c. 0.7-0.8 mm. crassa, fusco-rubra; collo conico; cellulis exothecii hexagonis, c. $30-40\mu$ in diam., superioribus rectangularibus, ad orificium in seriebus tribus minutis; stomatibus nullis. **Annulus** duplex, c. 70μ altus. **Exostomii** dentes sublato-lancæolati, c. 0.5 mm. longi et basi c. 0.08-0.09 mm. lati, inferne lutei transverse striatuli, e medio ad apicem hyalini papilloso, intus densiuscule (c. 35) lamellosi; **endostomium** luteum minutissime papillosum; corona basilaris c. 150μ alta; processus dentium fere longitudinis, carinati in carina anguste perforati, lutei, papilloso; cilia terna, brevia, hyalina, papillosa. **Operculum** conicum, apiculatum, c. 0.64 mm. longum et c. 0.72 mm. in diam. **Spori** 9-10 μ , fusci, lævissimi. **Calyptra** ignota.

Hondo: Prov. Nagato, Omine-mura, Mine-gun (Coll. TSUNETARO OTA! Janus 4, 1914.).

Nomen speciei ab forma apicis folii dorsalis.

Species **E. japonico** BROTH. valde affinis, sed folia dorsalia rotundato-elliptica vel rotundato-ovata apice apiculata, theca inclinata vel horizontalis dignoscenda.

Stereodon amblyostegus MITT. Journal of the proceed. of the Linn. soc. sup. Bot. Vol. I. p. 97, (1859).

Syn. **Hypnum amblystegum** WILS. in Sched.

(Tab. XVI. F-K.)

Habitatio ad rupes. Subrobustus, cæspitosus, cæspitibus rubescenti-viridibus vel fulvo-viridibus mollibus laxiusculis nitidis. **Caulis**

repens, c. 4–5 cm. longus et cum foliis c. 1.2 mm. latus, densiuscule pinnatim ramosus, sectione rotundus vel ellipticus c. 0.2 mm. in diametro, fasciculo centrali nullo, reti centrali hyalino, cellulis hexagonis c. 14μ in diametro, peripherico e cellulis minusculis rubiginosis 2–3-seriatis valde incrassatis, externis c. 14μ in diametro hyalinis (membrana externa tenera.) composito; ramis prostratis 5–15 mm. longis obtusis simplicibus vel pinnatim ramulosis; caulibus ramisque dense foliosis complanatis. **Folia** patula saepe homomalla falcata, ovato-vel oblongo-lanceolata apice sensim longe subulato-acuminata, c. 15–17 mm. longa et c. 0.3–0.4 mm. lata, concava sed in acumen canaliculata, laevia, marginibus e medio ad apicem remoto serrulatis, basi recurvis, alis concavis; nervis binis indistictisve c. 0.24 mm. longis; cellulis valde chlorophyllosis laevissimis pellucidus angustis, c. $50\text{--}80\mu$ longis et c. $4\text{--}6\mu$ latis, basilaribus linearibus c. $20\text{--}30\mu$ longis et c. $6\text{--}7\mu$ latis parce porosis rubiginosis, alaribus incrassatis porosis, inferialaribus 5–6-seriatis magnis rectangularibus c. $30\text{--}56\mu$ longis et c. $12\text{--}14\mu$ latis rubiginosis sed externis hyalinis, supraalaribus paucis subquadratis rubiginosis, in parte acuminata folii c. $50\text{--}60\mu$ longis et c. 4μ latis. **Cætera** ignota.

Hondo: Prov. Shinano, Sakai-mura, Shimotakai-gun (Coll. SHINZÔ ITÔ! October 28, 1913.).

Species nova ad floram japonicam.

Distr. Sikkim, Bhutan.

Stereodon ctenium (SCHIMP.) BROTH.

Korea: Quelpæert (Coll. SANKI ICHIKAWA! 1905.).

Stereodon Haldanianus (GREB.) LINDB. *var. viridis*
SH. OKAMURA. *var. nov.*

(Tab. XVII.)

Habitatio in truncis arborum defectrum. Gracilis caespitosus, caespitibus sat viridibus mollibus laxiusculis nitidis. **Inflorescentia** monoica; flores masculi in caule. **Caulis** prostratus 3–6 cm. longus, hic illic fasciculatim fusco-radiculosus, densiuscule pinnatim ramosus, sectione rotundus vel ellipticus 0.32 mm. in diametro,

fasciculo centrali arto, reti intermedio hyalino tenello, cellulis hexagonis c. $15-20\mu$ in diametro, peripherico e cellulis luteis 3-5-seriatis valde incrassatis composito; ramis prostratis c. 5-15 mm. longis, acutis, simplicibus vel pinnatim ramulosis; ramulis c. 5-7 mm. longis; caulibus ramis ramulisque dense foliosis subcomplanatis. **Folia** sicca laxè adpressa sæpe vix homomallula stricta, humida erecto-patentia, e basi breviter decurrentia late oblongo-vel oblongo-lanceolata apicè breviter attenuata, c. 1.6-2.0 mm. longa et c. 0.6-0.8 mm. lata, concava, haud plicata, marginibus planis integerrimis, alis concavis; nervis binis c. 0.24-0.3 mm. longis; cellulis linearibus valde chlorophyllosis c. $50-80\mu$ longis et $4-5\mu$ latis, basilaribus latioribus 7μ latis parce porosis haud coloratis, alaribus conspicuis numerosis (c. 30) subquadratis vel rectanglis c. 30μ latis hyalinis vel parce chlorophyllosis rare lutescentibus. **Ramulis perichætialis** cauligenis valde radiculosus. **Bractæ perichæti** intimæ e basi vaginante sensim angute subfiliformiter acuminatæ, c. 3.2 mm. longæ, haud plicatæ, in parte acuminatis remoto et obsoletissime serrulatæ; nervis binis obsoletis c. 0.48 mm. longis. **Vaginura** cylindrica, 1.2 mm. longa, fusca. **Seta** 1.5 cm. alta, rubra, strictus, lævissima, cicca torta. **Theca** oblongo-cylindrica, subrecta vel curvatula, deoperculata et sicca curvatula, c. 2 mm. longa et c. 0.8 mm. in diam., castanea, lævissima; cellulis exothecii rectanglaris vel hexagonis, c. $50-70\mu$ longa et c. $20-35\mu$ lata, ad orificium plano-hexagonis minoribus; stomatibus in collo numerosis. **Annulus** ignota. **Peristomium** duplex; **exostomii** dentes lineari-lanceolati, c. 0.5 mm. longi et basi c. 0.09-0.10 mm. lati, infernè lutei transverse striatuli, superne hyalini vel lutescentes papilloso, hyaline limbati, intus dense (c. 35-40) lamellosi; **endostomium** luteum papillosum; corona basilaris c. 0.25 mm. alta; processus dentium fere longitudinis, carinati in carina anguste perforati; cilia bina bene evoluta nodulosa hyalina papilloso. **Spori** c. 14-16 μ , virides, lævissimi. **Cætera** ignota.

Hondo: Prov. Shinano, Taira-mura, Kitaadumi-gun (Coll. SHINZÔ IRÔ! Augusto 20, 1913.).

A typo planta gracila viridus, cellulis alaribus hyalinis, folia basi haud coloratis differt.

Nomen varietatis ab colore ea.

***Stereodon plumaeformis* (WILS.) MITT.**

Kyûshû: Prov. Ôsumi, in insula Amami-Ôshima (Coll. SHÔZÔ YAJIMA!).

***Isopterygium caespalescens* LEVIER.**

Kyûshû: Prov. Ôsumi, Nase, Amami-Ôshima (Coll. K. MIYAMOTO! Julio, 1909.).

***Plagiothecium Matsumurae* SH. OKAMURA. sp. nov.**

(Tab. XVIII.)

Habitatio in truncis arborum defectrum silvaticarum. Robustum, caespitosum, caespitibus laxiusculis nitidiusculis mollibus lutescenti-viridibus. **Inflorescentia** dioica. **Caulis** prostratus, rubiginoso-radiculosus, irregulariter pinnatim ramosus c. 2–3 cm. longus, cum foliis c. 3–4 mm. latus, sectione rotundatus, c. 0.3–0.35 mm in diametro, fasciculo centrali pluricellulari, reti intermedio hyalino, cellulis pentagonis vel hexagonis c. 15–30 μ in diam., peripherico e cellulis luteis 3–5-seriatis valde incrassatis composito; ramis prostratis c. 1–1.5 cm. longis, obtusis vel elongatum attenuatis et saepe flagelliformibus, paulum ramulosis; caulibus ramisque dense foliosis valde complanatis, saepe stoloniferosis **Folia** sicca vix mutata, humida erecto-patentia, leniter concava, symmetrica vel asymmetrica, breviter decurrentia, ovato-oblonga, apice breviora et latiora acuta, c. 2.2–2.4 mm. longa et c. 1 mm. lata, e medio ad apicem transverse rugulosa, marginibus basi inflexis dein planis, integerrimis vel subintegerrimis; nervo valido, ultra medium evanido, furcato, sectione transversali plano-convexo, basi e 3-stratis cellularum composito, c. 40 μ crasso; cellulis linearibus, c. 90–140 μ longis et c. 5–7 μ latis, superioribus brevioribus c. 30–40 μ longis et c. 4 μ latis, basilaribus infimis laxioribus c. 9 μ latis, saepe fuscis, porosis, alaribus quadratis vel rectanglis, c. 30–50 μ longis et c. 20–30 μ latis, hyalinis. **Ramulus perichætialis** valde rubiginoso-radiculosus. **Bractæ perichætii** externæ e basi erectæ saepe recurvatæ; intimæ e basi alte vaginante breviter attenuatæ, c. 1.6–1.8 mm. longæ, erectæ, integerrimæ, enerves. **Vaginura**

cylindrica. c. 1 mm. alta, fusca apice nigra. **Seta** c. 2.-2.4 cm. alta, stricta apice arcuata, rubra, laevissima; sicca torta. **Theca** pendula vel horizontalis, oblongo-cylindrica, parce curvatula, c. 2.4 mm. longa et c. 0.6 mm. in diam., fusca, collo longe conico c. 0.5 mm. longo; cellulis exothecii rectangulis, c. 30-40 μ longis et c. 20 μ latis, ad orificium plano-hexagonis c. 10-12 μ ; stomatibus nullis. **Annulus** simplex, c. 70 μ altus, basi luteus, apice hyalinus. **Exostomii** dentes sublato-lanceolati, c. 0.40-0.44 mm. longi et basi c. 0.08 mm. lati, basi lutei transverse striatuli, e medio ad apicem lutescentes papilloso, intus dense (c. 30-35) et alte lamellosi; **endostomium** lutescens dense papillosum; corona basilaris c. 150 μ alta; processus dentium longitudinis, carinati in carina angustissime perforati; cilia terna, bene evoluta, papillosa. **Spori** c. 9-10 μ . lutescenti-fusci, laevissimi. **Operculum** e basi conicum longe rostratum (rostro suberecto vel curvato), c. 0.7-0.8 mm. longum et c. 0.6 mm. in diam. **Calyptra** cucullata, c. 3.0-3.5 mm. longa, lutescens apice fusco-nigra. **Matur** vere.

Hondo: Prov. Uzen, Inooka-mura, Nishitagawa-gun (Coll. ? Aprili 7, 1903.).

Nomen speciei in honorem Prof. JINZÔ MATSUMURA, in Academia Scientiae, Imp. Univ. Tôkyôensis.

Species cum **P. Neckeroideo** comparanda, sed ramis brevioribus, foliis ovato-oblongis apice brevioribus et latioribus acutis, nervo valido longiore, seta brevioribus, cilia terna dignoscenda.

Plagiothecium pallidum SH. OKAMURA. sp. nov.

(Tab. XX. G-M.)

Habitatio ad arborum radices. Robustiusculum, caespitosum, caespitibus pallidis nitidiusculis densis laxis. **Caulis** prostratus, hic illic fasciculatim fuscescenti-radiculosus, laxè vel densiuscule ramosus, sectione rotundatus, c. 0.28 mm. in diam., fasciculo centrali arto, reti intermedio hyalino tenero, cellulis hexagonis c. 20 μ in diam., peripherico e cellulis tenello minoribus (c. 10 μ .) fuscescentes composito; ramis prostratis vel ascendentibus, c. 7-15 mm. longis, basi dense radiculosis, simplicibus vel parce (1-4) irregulariter ramulosis; ramulis c. 5-8 mm. longis; caulibus ramis

ramulisque dense foliosis complanatis, cum folii c. 2.5–3. mm. latis, obtusis. **Folia** sicca laxè adpressa, humida erecto-patentia, symmetrica vel subasymmetrica, concava, vix decurrentia, e basi contracta ovato-oblonga apice brevior et valde latiore acuta, c. 1.6 mm. longa et c. 0.96 mm. lata, marginibus basi reflexis dein planis, integerrimis; nervo valido, medium folii evanido, inæqualiter furcata, in sectione transversali plano-convexo, basi e 4-stratis cellularum composito c. 35μ crasso; cellulis chlorophyllosis, lævibus, prosenchymaticis, c. 90μ longis et c. 7μ latis, marginalibus elongatis angustis, superioribus brevioribus c. $15\text{--}40\mu$ longis et c. $4\text{--}5\mu$ latis, basilaribus laxioribus c. $40\text{--}70\mu$ longis et c. $9\text{--}12\mu$ latis, inter se porosis, alaribus pluribus, rectangularibus, c. $30\text{--}40\mu$ longis et c. 20μ latis, fuscis vel hyalinis. **Cætera** ignota.

Hondo: Prov. Ecchû, Seki, Ôda-mura, Kamishinkawa-gun (Coll. HISAHIKO SASAOKA! Aprili 19, 1913.).

Nomen speciei ab colore ea.

Species **P. Squamato** BROTH. ms. affinis, sed foliis apice brevior et valde latiore acutis, integerrimis, nervo valido longiore jam abunde diversa.

Vesicularia cuspidata SH. OKAMURA. sp. nov.

(Tab. XXI.)

Habitatio ad rupes humidas. **Inflorescentia** monoica, flores masculi in ramis. Robustuscula, cæspitosa, cæspitibus mollibus lutescenti-viridibus vel lutescenti-fuscis nitidiusculis laxiusculis. **Caulis** prostratus, c. 5–9 cm. longus, irregulariter pinnatim ramosus, sectione rotundus vel ellipticus, 0.32 mm. in diametro, fasciculo centrali indistincto, reti hyalino, cellulis hexagonis, peripherico minoribus; ramis simplicibus vel elongate et irregulariter pinnatim ramulosis, c. 5–10 mm. longis, sæpe 3 cm. longis, cum foliis c. 2 mm. latis, obtusis; caulibus ramisque dense et valde complanate foliosis. **Folia** sicca adpressa et vix crispata, humida erecto-patentia, asymmetrica, concava, marginibus planis, apice minute serrulatis; folia dorsalia e basi angustata elliptica vel late elliptica apice breviter cuspidata, c. 1.1–1.2 mm. longa et 0.6–0.7 mm. lata;

folia lateralía oblongo-lanceolata apice attenuata, c. 1.2–1.3 mm. longa et c. 0.5–0.56 mm. lata; folia ventralia ovato-lanceolata apice breviter attenuata, c. 0.9–1.1 mm. longa et 0.48–0.64 mm. lata; nervis binis, c. 0.24–32 mm. longis; cellulis chlorophyllosis, lævissimis, elongate rhomboideo-hexagonis, c. 60–80 μ longis et 15–20 μ latis, superioribus breviter rhomboideis, c. 30–40 μ longis et 12–15 μ latis, basilaribus rectangularibus, c. 40 μ longis et 15 μ latis, alaribus inconspicuis, utriculo primordiali indistincto. **Ramulus perichætiæ** radiculosus. **Bractæ perichætiæ** intimæ e basi semivaginate et oblongo-lanceolatæ elongate attenuatæ, c. 2 mm. longæ et c. 0.4 mm. latæ, integerrimæ, enerves. **Vaginula** cylindrica, 0.9 mm. alta, fusca; paraphysibus numerosis hyalinis. **Seta** c. 1.0–1.5 cm. longa, leniter flexuosa, lutescenti-rubra, lævissima, sicca leniter torta. **Theca** inclinata, elliptica, c. 1.4 mm. longa et c. 0.64 mm. in diametra, lutescenti-rubra, collo conico c. 0.5 mm. longo; cellulis exothecii quadratis hexagonis vel rectangulis, ad orificium minutis. **Annulus** c. 45–60 μ altus, persistans, basi luteus, apice hyalinus. **Exostomii** dentes lineari-lanceolati, c. 0.4 mm. alti et basi 0.07 mm. lati, inferne lutei transverse striatuli, e medio ad apicem hyalini papilloso, intus densiuscule (c. 35.) lamellosi; **Endostomium** luteum; corona basilaris c. 140 μ alta, læviusculum; processus dentium fere longitudinæ, carinati in carina anguste perforati, papilloso; cilia 1, brevia c. 350 μ alta, hyalina, papillosa. **Spori** c. 12–15 μ , virides, læves. **Cætera** ignota.

Hondo: Prov. Ise, Yatsubodani, Tado-mura, Kuwana-gun (Coll. HISAHIKO SASAOKA! Janus 20, 1914.).

Nomen speciei ab forma apicis folii dorsalis.

Species **V. Okamurae** BROTH. et **V. apiculato** BROTH. ms. proxima, sed statura robustiore, caule multi-ramoso, foliis dorsali cuspidatis dignoscenda.

Vesicularia Yajimae SH. OKAMURA. sp. nov.

(Tab. XVI. A–E.)

Robustiuscula, cæspitosa, cæspitibus mollibus virescentibus, laxiusculis nitidiusculis. **Caulis** prostratus, hic illic fasciculatim fusco-radiculosus, dense et regulariter pinnatim ramosus, c. 5–8 cm.

longus, sectione ellipticus vel subrotundatus, c. 0.3–0.4 mm. in diametro, fasciculo centrali arto, reti intermedio hyalino, cellulis hexagonis 20–40 μ in diam., peripherico e cellulis 2–3-seriatis paulum incrassatis minoribus (c. 12 μ .) composito; ramis 5–10 mm. longis et cum follis c. 1.5–2.0 mm. latis, simplicibus sæpe elongatum (c. 2–3 cm.) pinnatim ramulosis obtusis, prostratis; caulibus ramisque dens foliosis valde complanatis. **Folia** sicca vix crispata et erecto-patentia vel patentia, humida patentia, haud homomallula, concava, marginibus planis, e medio ad apicem serratis; folia dorsalia late elliptica vel obovata apice breviter attenuata, c. 0.8–0.96 mm. longa et c. 0.45–0.5 mm. lata; folia lateralia ovato-lanceolata vel late elliptico-lanceolata apice attenuata, c. 0.95 mm. longa et c. 0.45 mm. lata, valde concava; folia ventralia oblongo-lanceolata apice longe attenuata, c. 0.9–0.96 mm. longa et c. 0.35–0.4 mm. lata; nervis binis, brevissimis, c. 0.16 mm. longis; cellulis chlorophyllosis, lævissimis, elongate rhomboideo-hexagonis, laxis, c. 50–70 μ longis et c. 18–20 μ latis, (utriculo primordiali distincto) basilaribus 15 μ latis, alaribus inconspicuis, superioribus abbreviatis oblongo-rhomboideis, c. 30–40 μ longis et 15–20 μ latis, marginalibus angustis c. 7–8 μ latis. **Cætera** ignota.

Japonia: prov. ? (Coll. SHÔZÔ YAJIMA.)

Nomen speciei in honorem Coll. Dom. S. YAJIMA.

Brachytheciaceae.

Okamuraea plicata CARD. Bull. de la Soc. bot. de Genève, 2^{me} Sér. Vol. IV. p. 379. (1912).

(Tab. XXII.)

Die sterileproben dieser Art wurde schon von Herrn JULES CARDOT beschrieben. Gelegentlich erhielt ich aber, im letzten Jahre, zahlreiche Fruchtproben derselben aus Prov. Kii, daher gebe ich hier wiederholt ein volle Diagnose.

Habitatio in truncis arborum defectrum silvaticarum. Gracilis, cæspitosa, cæspitibus laxiusculis nitidiusculis rigidiusculis viridibus. **Caulis** elongatus, repens, hic illic fasciculatim fusco-radice-

losus, densiuscule ramosus, sectione c. 0.27 mm. crassus teres, fasciculo centrali paucicellulari, reti intermedio hyalino sed veterimo nigro, cellulis oblongo-hexagonis 12–15 μ in diametro, peripherico e cellulis lutescenti-fuscis pluriseriatis valde incrassatis composito; ramis erectis asendentibus vel curvatis, c. 2.0–2.5 cm. altis, dense foliosis, teretibus, apice attenuatis et breviter flagellatis vel saepe obtusis et haud flagelliformibus, simplicibus vel parce subpinnatim ramulosis; ramulis c. 1. cm. longis; patulis, attenuatis vel obtusis, **Folia** sicca laxè adpressa longitudinaliter subplicata, humida imbricata, breviter decurrentia, valde concava, late ovato-oblonga apice subitò elongata subpiliforme attenuata, c. 1.6–2.2 mm. longa et c. 0.9–1.0 mm. lata (acuminibus c. 0.45–0.54 mm. longis.), carinata, profunde triplicata, marginibus planis, ubique obsolete serrulatis; nervo viride, ad c. $\frac{2}{3}$ evanido, in sectione transversali plano-convexo, basi e 3-stratis cellularum composito; cellulis angustis linearibus, basilaribus c. 30–45 μ longis et c. 6 μ latis, parietibus crassis et parce minute porosis, alaribus numerosis lumine inferiori quadrateo rectangulari vel ovali superiori plerumque vermiculari in seriebus obliquis disposito, cellulis alaris c. 10–15 μ longis et c. 6–8 μ latis, cellulis ad basin acuminis linearibus vel rhomboideo-linearibus c. 30–40 μ longis et c. 8 μ latis, cellulis in acuminem linearibus c. 45–60 μ longis et 5 μ latis. **Ramulus perichæetialis** parce radiculosus. **Bractæ perichæetii** intimæ e basi vaginante sensim anguste filiformiter acuminatæ et recurvæ, c. 2.25–2.7 mm. longæ et 0.6 mm. latæ, apice crenulatæ; nervo ante apicem evanido; cellulis foliis similis. **Archegonia** numerosa, paraphysibus sat numerosis lutescentibus c. 0.54 mm. longis. **Vaginura** cylindrica, 1.2 mm. longa, lutescenti-viridis, apice fusca. **Seta** c. 2.5 cm. alta, rubra, lævissima, tenuis, stricta, sicca torta et leniter flexuosa. **Theca** inclinatula rarius erecta, symmetrica, oblongo-cylindrica, castanea, lævissima, c. 2 mm longa et c. 0.8 mm. crassa, brevicollis; cellulis exothecii quadratis hexagonis vel rectangularis c. 40 \times 24–30 μ , ad orificium plano-hexagonis c. 15 \times 9 μ , stomatibus in collo paulum positis, phaneroporis. **Annulus** simplex, 16 μ altus, castaneus, deciduus. **Peristomium** duplex; **exostomii** dentes lineari-lanceolati, c. 0.4 mm. longi et

basi 60μ lati, linea media flexuosa, strato dorsali lutescenti-fusco minutissime papilloso, marginibus cristatis, strato ventrali densissime (c. 35–40) et alte lamelloso albido; **endostomium** flavidum, minutissime papillosum; corona basilaris ultra medium dentium producta; processus nulli; cilia nulla. **Spori** c. $20\text{--}24\mu$, lutescenti-virides, subscabri. **Operculum** e basi conicum longe et parce oblique rostratum, c. 1.0–1.2 mm. altum et c. 0.6 mm. in diam. **Calyptra** cuculata, c. 2.4–2.9 mm. longa, fulva, parce (c. 7–8) pilosa. **Matur** hyeme.

Hondo: Prov. Kii, Hiraigo-dani, Chikano-mura, Nishimuro-gun, (Coll. KUMAGUSU MINAKATA! November 1908.).

Distr. Kyûshû: Prov. Ôsumi, ins. Yakushima.

Species distinctissima, a congeneribus foliorum forma jam raptim cognoscenda.

Okamuraea cristata BROTH. var. **multiflagellifera** SH. OKAMURA. n. var.

(Tab. V. I–L.)

Gracilis, caespitosa, caespitibus lutescenti-viridibus rigidisculis laxiusculis nitidiusculis. **Caulis** repens, densiuscule ramosus; ramis erectis vel curvatis, 1–3 cm. longis, dense foliosis, teretibus, apice longe attenuatis rare subobtusis, simplicibus vel pinnatim ramulosis; ramulis c. 1–2 cm. longis, patulis, longe flagelliformiter attenuatis; ramis ramulisque multi-flagelliferis, flagellis longe elongatis et saepe ramulosis microphyllinis c. 2–3 cm. longis. **Folia** ramea et ramulina late ovato-lanceolata, apice attenuata, c. 2.2 mm. longa et c. 0.9 mm. lata, plerumque paulum longitudinaliter subplicata; flagella late ovato- vel oblongo-lanceolata, apice attenuata, c. 0.4 mm. longa et c. 0.16 mm. lata, humida erecto-potentia laevissimis.

Hondo: Prov. Iyo, in monte Ishiduchi (Coll. JUKICHI SHIRAGA! Septembri 1906.).

A typo ramis ramulisque multi-flagelliferis, foliis plerumque paulum longitudinaliter subplicatis differt.

Brachythecium populeum (HEDW.) BR. EUR.

Korea: Quelpart (Coll. SAKI ICHIKAWA! 1905.).

Matsumuræa SH. OKAMURA. gen. nov. Bot. Mag. Tôkyo, vol. XXVIII. no. 327. p. 105-110. (1914).

Inflorescentia dioica; planta mascula ignota. **Caulis** prostratus elongatus irregulariter pinnatim ramosus; ramis prostratis strictis vel curvatis, attenuatis vel obtusis, simplicibus vel subpinnatim ramulosis; caulibus ramisque dense foliosis complanatis. **Folia** concava, longitudinaliter multi-plicata, e basi minute auriculata ovato-vel oblongo-lanceolata apice acuminata, acuminibus elongatis spiraliter 1-2-plo tortis, marginibus planis, ubisque serratis; nervo robusto; infra summum apicem folii evanido; cellulis rhomboideis sublineari-rhomboides vel linearibus, utroque facie papilla singula medio notatis, alaribus numerosis quadratis vel rectangularibus læves, inferioribus et superioribus læves. **Bractæ perichætii** intimæ e basi semi-vaginate oblongæ subito in acumen elongatum angustum denticulatum subpiliforme sensim attenuatæ. **Seta** c. 5 cm. alta. lævissima. **Theca** inclinata vel horizontalis, e collo distincto oblonga vel breviter oblongo-cylindrica. **Annulus** duplex, deciduus. **Peristomium** duplex eo Brachythecii simile. **Operculum** e basi conicum rostratum. **Calyptra** cucullata. **Spori** læves, c. 14-16 μ .

Planta monotypica.

Nomen generi in honorem Prof. JINZÔ MATSUMURA, in Academia Scientiæ, Imp. Univ. Tôkyôensis.

Genus **Brachythecio** affine, sed cellulis foliorum utraque facie papilla singula medio notatis longe diversum.

Matsumuræa japonica SH. OKAMURA. sp. nov. Bot. Mag. Tôkyô. vol. XXVIII. no. 327. p. 107-110. (1914).

(Tab. XXIII.)

Habitatio terrestris vel rarius in truncis arborum sylvaticarum. **Inflorescentia** dioica; flores masculi ignota. **Planta** habitu Brachythecio eustegio, Rhytidiadelpho loreo et Rhytidiadelpho triquetro subsimilis. Valde robusta, caespitosa, caespitibus laxis rigidiusculis læte viridibus vel lutescenti-viridibus nitidiusculis. **Caulis** prostratus elongatus leniter flexuosus, ad c. 15 cm. longus, hic illic fasciculatum fusco-radiculosus, densiuscule subirregulariter pinnatim

ramosus, sectione teres c. 0.45–0.5 mm. crassus, fasciculo centrali minutis paucicellulari, reti intermedio hyalino pulvriseriatas (c. 10 seriatas), cellulis hexagonis c. 15–24 μ magnis tenellis, periphericis stratis tribus minoribus incrassatis fuscis; ramis prostratis, strictis vel curvatulis, attenuatis vel obtusis, c. 2–4 cm. sæpe 5–10 cm. longis, simplicibus vel subregulariter pinnatim ramulosis; ramulis 1–3 cm. longis, breviter attenuatis; caulibus ramis ramulisque dense foliosis complanatis, cum foliis c. 4–6 mm. latis; paraphyllia nulla. **Folia** unimorpha, sicca argute plicata, sicca humidaque erecto-patentia, concava, irregulariter et longitudinaliter multiplicata, e basi minute auriculata ovato-vel oblongo-lanceolata, in acumen lanceolato-subulatum subcanalicratum subflexuosum sæpe spiraliter 1–2-plo tortum longe attenuata, c. 3.8–4.5 mm. longa et c. 1.0–1.3 mm. lata, marginibus basi leniter recurvis ceteroquim planis, ubique et præcipue ad apicem majore serratis; nervo valido, infra summum apicem evanido, in sectione transversali plano-convex vel subbiconvex, dorso valde prominenti, basi c. 0.112 mm. lato et c. 48 μ crasso, stratis 4 cellularum uniformium subincrassatarum composito, cellulis ventralibus c. 8, cellulis dorsalibus c. 15; cellulis laminalibus valde chlorophyllosis, in medio folii anguste rhomboideis vel lineari-rhomboideis c. 20–50 μ longis et c. 4–7 μ latis, utroque facie papilla singula medio notatis, basilaribus linearibus læves c. 80–100 μ longis et c. 4–7 μ latis inter se porosis, alaribus pluribus (c. 35) quadratis hexagonis vel rectangularibus ad 24 μ longis et c. 16 μ latis læves, superioribus linearibus c. 40–60 μ longis et c. 4–5 μ latis læves. **Flores** feminei in caule vel ramis. **Bractæ perichæti** intimæ e basi semi-vaginante et oblongæ subito in acumen elongatum angustum denticulatum subpillioforme sensim attenuatæ, c. 4.5 mm. longæ et c. 0.9 mm. latæ, marginibus ad basin acuminis undulatis; nervo tenui, basi indistincto, in medium acuminis evanido; cellulis linearibus, basilaribus hyalinis, c. 80 μ longis et 16 μ latis, in medio c. 80–160 μ longis et 16 μ latis, superioribus c. 60 μ longis et c. 6 μ latis, omnino lævissimis. **Vaginula** cylindrica, c. 1.6 mm. alta. et c. 0.6 mm. in diam., fusca; paraphysibus numerosis. **Seta** c. 5 cm. alta rarius 2.–3.5 mm. alta, stricta, rubiginosa, lævis, sicca torta. **Theca** inclinata vel

horizontalis, e collo conicum oblonga vel breviter oblongo-cylindrica, c. 3.-3.5 mm. longa et c. 1.5 mm. in diam., castanea, laevissima; cellulis exotheci rectangulo-hexagonis vel hexagonis, c. 48-80 μ longis et c. 30-40 μ latis, ad orificium in seriebus duabus vel tribus minutis hexagonis c. 15 μ magnis; stomatibus in collo numerosis, phaneroporis. **Annulus** duplex, c. 50-60 μ altus, basi fuscus apice luteus, deciduus. **Peristomium** duplex; **exostomii** dentes basi connati, lanceolato-subulati, c. 0.8 mm. longi et basi c. 0.12-0.16 mm. lati, linea media flexuosula, strato dorsali luteo, basi transversim striatulo, dein oblique striatulo, apice hyalino papilloso, strato ventrali latiore albido densissime (c. 45) et bene evolute lamelloso; **endostomium** luteum, minute papillosum; corona basilaris c. 0.3 mm. alta; processus dentium fere longitudinis carinati in carina late perforati; cilia 3-4, bene evoluta, 8-10-nodulosa nodo breviter prominenti. **Spori** c. 14-16 μ magni, virides, laeves, matur auctumno. **Operculum** e basi conicum rostratum, c. 1.2-1.4 mm. longum et c. 0.8 mm. in diam., rostro brevi, culvato, obtuso et apiculato. **Calyptra** cucullata, c. 3.2 mm. longa, viridiuscula, nuda, apice paulum scabrera.

Hondo: Prov. Ômi, in monte Ibuki (Coll. TAJI HASEGAWA! Augusto 6, 1907.); Prov. Aki in monte Akedu (Coll. JUKICHI SHIRAGA! Junio 1911.); Prov. Idu in mont Amagi (Coll. KIYOSHI FUJI! Septembri 2, 1912. et KIYOTAKA HISAUCHI! Janus 2, 1914.); Prov. Shimoduke in monte Iduru (Coll. KIYOSHI KAWAGUCHI! October 20, 1911.); Prov. Sagami in monte Myojin, Hakone (Coll. KIYOTAKA HISAUCHI! Julio 20, 1913.); Prov. Ecchû, Ôyama-mara, Kamishinkawa-gun (Coll. HISAHIKO SASAOKA! Septembri 13, 1913.); Prov. Ecchû, Fukuzawa-mura, Kamishinkawa-gun (Coll. HISAHIKO SASAOKA! October 5, 1913.); Prov. Iga, Takigawa-mura, Naga-gun (Coll. HISAHIKO SASAOKA! November 12, 1913.).

Myuroclada concinna (WILS.) BESCH.

Sachalin: Notoro (Coll. HIROSHI YOSHIDA! Augusto, 1913.).

***Oxyrrhynchium Sasaokæ* SH. OKAMURA. sp. nov.**

(Tab. XXIV.)

Habitatio ad rupes humiditas. Robustum, caespitosum, caespitibus laxiusculis viridibus nitidis. **Inflorescentia** monoica; flores utriusque sexus in ramis; folia perigonia intima e basi truncata obovata subito in acumen brevius et latius acutum contracta, enervia, c. 0.8 mm. longa et c. 0.56 mm. lata; antheridia c. 8; parapysibus numerosis. **Caulis** elongatus, repens, hic illic fasciculatim rubiginoso-radiculosus, sectione teres c. 0.56 mm. crassus, fasciculo centrali pluricellulari, reti intermedio hyalino, cellulis hexagonis c. 20–30 μ in diametro, peripherico e cellulis fuscis pluriseriatis (c. 4–6 stratis) valde incrassatis composito; ramis erectis vel leniter curvatis, inter se remotis, c. 15–25 mm. longis, dense foliosis et teretibus vel subcomplanatis (sicca valde complanatis), obtusis vel acutis, simplicibus vel parce (1–3) ramulosis; ramulis brevioribus ad 7 mm. longis. **Folia** sicca adpressa haud homomallula, humida erecto-patentia vel patentia, inferiora minuta, superiora sensim majora, vix decurrentia, rotundato-cordata vel paene rotundata apice rotundato-obtusa vel breviter et latiuscule acuta, c. 1.6 mm. longa et c. 1.6 mm. lata, concaviuscula, marginibus basi integris dein minute serrulatis: nervo viridi, ad $\frac{3}{4}$ – $\frac{4}{5}$ evanido, rarius 1-nervuloso, basi crassiusculo, apice tenuiore et dorso haud prominenti, in sectione transversali basi plano-convexo dorso prominenti, c. 42 μ crasso, e cellularum uniformium stratis 4 composito, cellulis ventralibus c. 8, cellulis dorsalibus c. 12–13, omnino tenuibus; cellulis laminalibus valde chlorophyllosis, laevibus, anguste linearibus, in medio folii c. 70–120 μ longis et c. 5–7 μ latis, basilaribus laxioribus c. 28–70 μ longis et c. 9–12 μ latis, alaribus pluribus rectangularibus c. 42 μ longis et c. 14 μ latis chlorophyllosis, marginalibus brevioribus c. 25–40 μ longis, superioribus brevissimis oblongis vel rhomboideis c. 14 μ longis et c. 7 μ latis. **Ramulus perichætiæ** parce radiculosus. **Bractæ perichætiæ** intimæ e basi semivaginate sensim lanceolato-subulatae (subula recurva argute serrulata), c. 2.2 mm. longæ et c. 0.6 mm. latæ, enerves. **Seta** c. 10–13 mm. alta, rubura, laevis, sicca torta. **Theca** inclinata,

oblonga, symmetrica, sicca et deoperculata sub ore valde contracta, cicca saepe curvatula, cum collo c. 1.5 mm. longa et c. 0.6–0.7 mm. in diam, fusca, laevis, collo conico c. 0.5 mm. longo; cellulis exotheci oblongo-hexagonis, c. 42μ longis et c. 20μ latis, ad orificium in seriebus duabus minutis c. 15μ magnis; stomatibus in collo sat numerosis, rima oblonga. **Annulus** duplex, c. 60μ altus, fuscus, deciduus. **Exostomii** dentes lineari-lanceolati, c. 0.46 mm. longi et basi c. 0.084 mm. lati, rubiginosi et transverse striatuli, apice lutei et papilloso, hyaline limbati, intus dense (c. 40) lamellosi; **endostomium** luteum, papillosum, c. 0.42 mm. longum; corona basilaris 0.14 mm. longa; processus carinati in carina late perforati; cilia 2–3, bene evoluta, papillosa, c. 5 nodulosa. **Spori** c. 15μ , virides, laeves. **Operculum** e basi humile conicum longe rostratum, c. 0.8–1.0 mm. longum, rostro curvato. **Calyptra** cuculata, c. 1.7 mm. longa, lutescenti-viridis sed basi et apice fusca.

Hondo: Prov. Eechû, Ôyama-mura, Kamishinkawa-gun (Coll. HISAHIKO SASAOKA! Septembri 13, 1913.); Prov. Bicchû, Takahasni-chô, Jôbô-gun (Coll. JUKICHI SHIRAGA! Augusto, 1913.)

Nomen speciei in honorem Coll. Dom. HISAHIKO SASAOKA.

Species **O. rusciformi** et **O. Schottmülleri** valde affinis, sed foliis pæne rotundatis jam abunde diversa.

Bryhnia Nakanci SH. OKAMURA. sp. nov.

(Tab. XX. A–F.)

Habitatio aquatica, ad rupes. **Plantæ** tenelliusculæ lutescenti-virideres haud nitidæ. **Caulis** longe repens, hic illic fasciculatim fusco-radiculosus, irregulariter et densiuscule pinnatim ramosus, sectione teres c. 0.2–0.3 mm. crasso, fasciculo centrali perpaucicellulari (c. 5), reti intermedio hyalino, cellulis hexagonis c. 32μ magnis tenellis, peripherico e cellulis c. 2-seriatis minoribus valde incrassatis composito; ramis 3–20 mm longis, obtusis vel acutis, simplicibus vel subirregulariter pinnatim ramulosis et saepe elongate flagelliformiter productis (c. 4–6 cm. longis); ramulis c. 5–8 mm. longis; ramis ramulisque dense foliosis teretibus. **Folia** sicca vix mutata, humida erecto-potentia vel potentia, haud

plicata, breviter decurrentia, concava; folia caulina e basi contracta cordato- vel ovato- lanceolata, in acumen sæpe semitortum breviter attenuata, c. 1.5–1.7 mm. longa et c. 0.8–1.0 mm. lata; folia ramea et ramulina ovata vel late ovata, apice acuta, c. 1.0–1.2 mm. longa et c. 0.6 mm. lata; marginibus basi anguste recurvis et integris, dein planis et argute serratis; nervo valido, ad basin acuminis evanido, extremitate dorso denticulo instructo; cellulis e medio folii ad apicem anguste rhomboideis, apice dorso prominente papillois, c. 24–50 μ longis et c. 6–8 μ latis, infimis linearibus c. 40–50 μ et c. 8–10 μ latis, alaribus rectangularibus c. 12–16 μ latis. **Cætera** ignota.

Hondo: Prov. Ugo, Lacus Tazawa (Coll. HARUFUSA NAKANO! Augsto 4, 1912.).

Nomen speciei in honorem Coll. Dom. H. NAKANO.

Species **B. Novae Angliae** affinis, sed foliis caulinis breviter decurrentis, apice latiore et brevioris, foliis rami apice brevioris diversa.

Diese Art aufnahm er aus dem um 19 Meter. tiefen Bodene in der Nähe von Ôsawa am Ufere des Tazawa-sees.

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<i>ericoides</i> (WEB.) BR. EUR.		10
<i>Rhacopilum aristatum</i> MITT.		25
<i>Rhizogonium spiniforme</i> (L.) BROCH.		15
<i>Rhodobryum giganteum</i> (HOOK.) PAR.		14

	TAB.	PAGE.
R. Wichuræ (BROTH.) BROTH.		14
Rhytidium rugosum (EHRH.) KINDB.		32
Scapania nemorosa (L.) DUM.		3
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Stereodon amblyostegus MITT.	XVI.	33
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S. Haldanianus (GREB.) LINDE, var. virides SH. OKAMURA.	XVII.	34
S. plumæformis (WILS.) MITT.		36
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Ulota japonica (SULL. ET LESQ.) MITT.		10
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SHÛTAI OKAMURA:

CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA I.

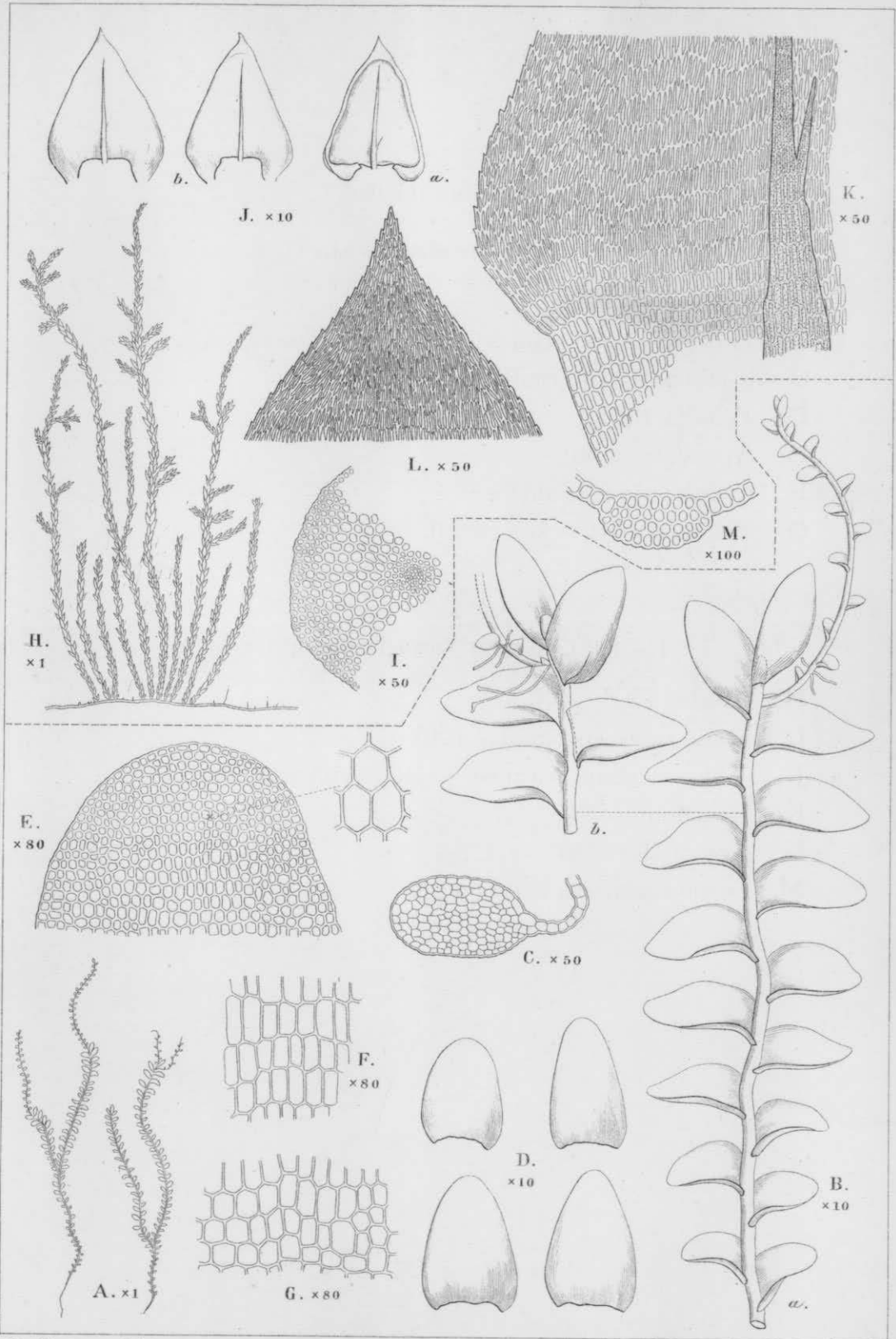
Explicatio tabulae I.

A-G. *Aplozia towadaensis* SH. OKAMURA.

- A. Plantae ($\times 1$).
 - B. Pars plantae, a. planta dorsalia, b. planta ventralia ($\times 10$).
 - C. Sectio transversa caulis ($\times 50$).
 - D. Folia ($\times 10$).
 - E. Apex folii ($\times 80$).
 - F. Cellulae mediae folii ($\times 80$).
 - G. Cellulae basilares folii ($\times 80$).
-

H-M. *Calliergon Kawaguchii* SH. OKAMURA.

- H. Planta ($\times 1$).
- I. Sectio transversa caulis ($\times 50$).
- J. Folia, a. folium naturale, b. folia explicatum ($\times 10$).
- K. Basis folii ($\times 50$).
- L. Apex folii ($\times 50$).
- M. Sectio transversa nervi ($\times 100$).



Sh. Okamura del.

A-G. *Aplozia towadaensis* SH. OKAMURA.

H-M. *Calliergon Kawaguchii* SH. OKAMURA.

SHÛTAI OKAMURA:

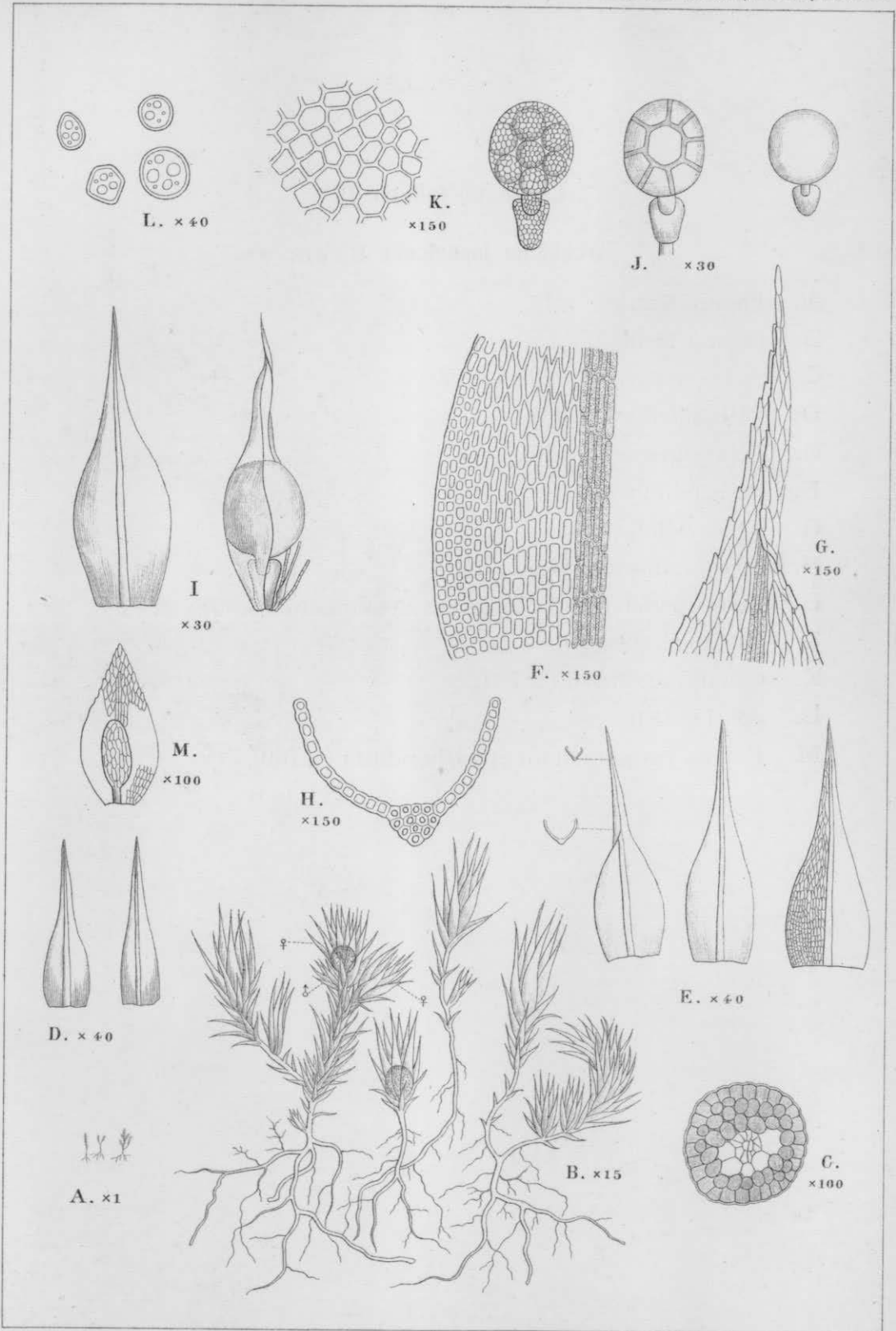
CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA II.

Explicatio tabulae II.

Archidium japonicum BROTH.

- A. Plantae fertiles ($\times 1$).
- B. Plantae fertiles ($\times 15$).
- C. Sectio transversa caulis ($\times 100$).
- D. Folia inferiora ($\times 40$).
- E. Folia superiora ($\times 40$).
- F. Basis folii ($\times 150$).
- G. Apex folii ($\times 150$).
- H. Sectio transversa folii ($\times 150$).
- I. Braeta perichaetiarum intima et Sporangium ($\times 30$).
- J. Sporangia ($\times 30$).
- K. Cellulae exothecii ($\times 150$).
- L. Spori ($\times 40$).
- M. Folium perigonalium et antheridium ($\times 100$).



Sh. Okamura del.

Archidium japonicum BROTH.

SHÛTAI OKAMURA:

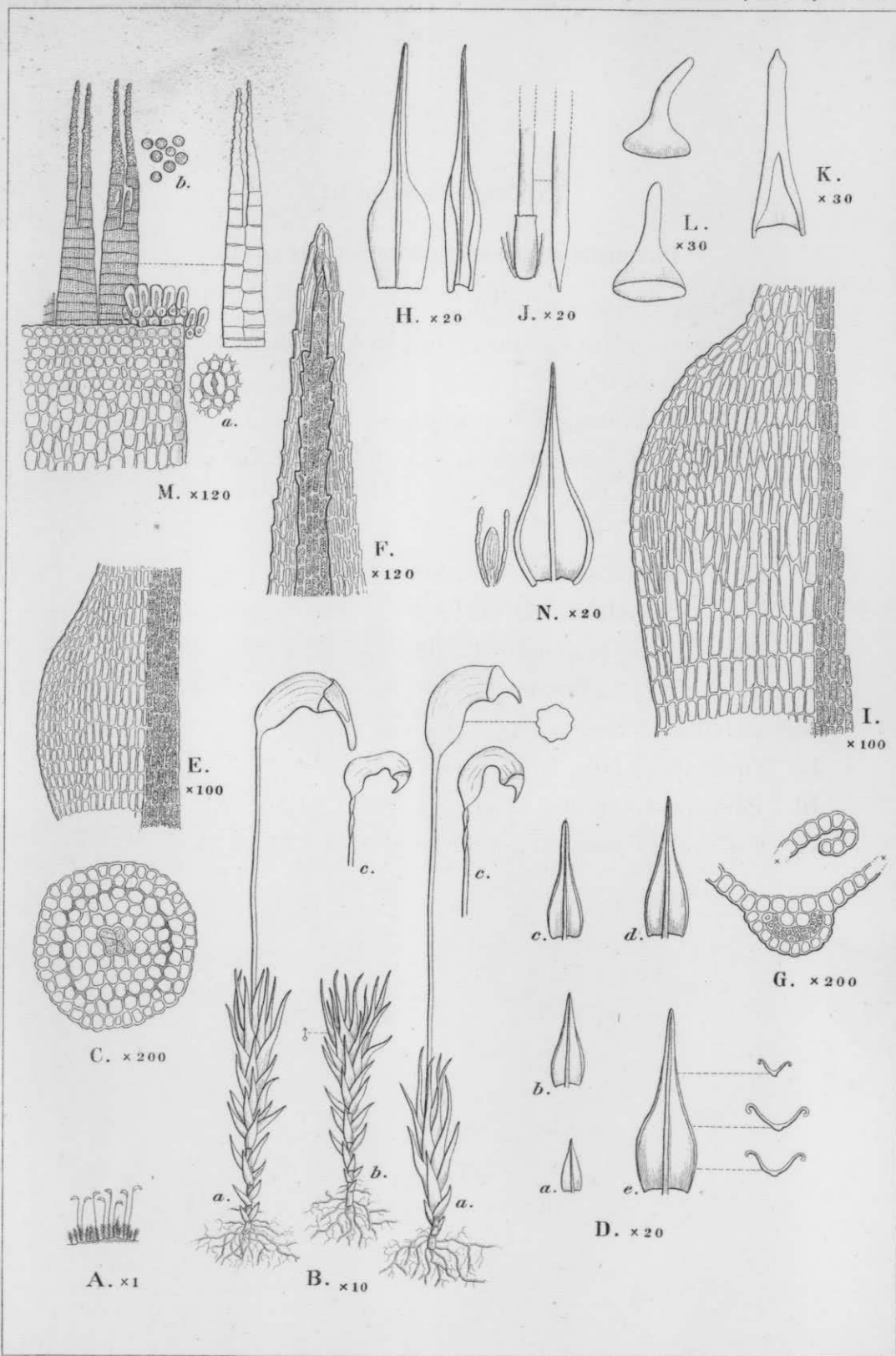
CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA III.

Explicatio tabulae III.

***Dicranella recurvmarginata* SH. OKAMURA.**

- A. Plantae caespitosae ($\times 1$).
- B. Plantae a. planta feminea, b. planta masucla, c. sporangium siccum ($\times 10$).
- C. Sectio transversa caulis ($\times 200$).
- D. Folia, a.b.c. folia inferiora, d. e. folia superiora ($\times 20$).
- E. Basis folii ($\times 100$).
- F. Apex folii ($\times 120$).
- G. Sectio transversa nervi ($\times 200$).
- H. Bractae perichaetii intima ($\times 20$).
- I. Basis bractae perichaetii ($\times 100$).
- J. Vaginula et basis setae ($\times 20$).
- K. Calyptra ($\times 30$).
- L. Opercula ($\times 30$).
- M. Pars peristomii et a. stoma, b. spori ($\times 120$).
- N. Folium perigonalium et antheridium ($\times 20$).



Sh. Okamura del.

Dicranella recurvilinearata SH. OKAMURA.

SHÛTAI OKAMURA:

CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

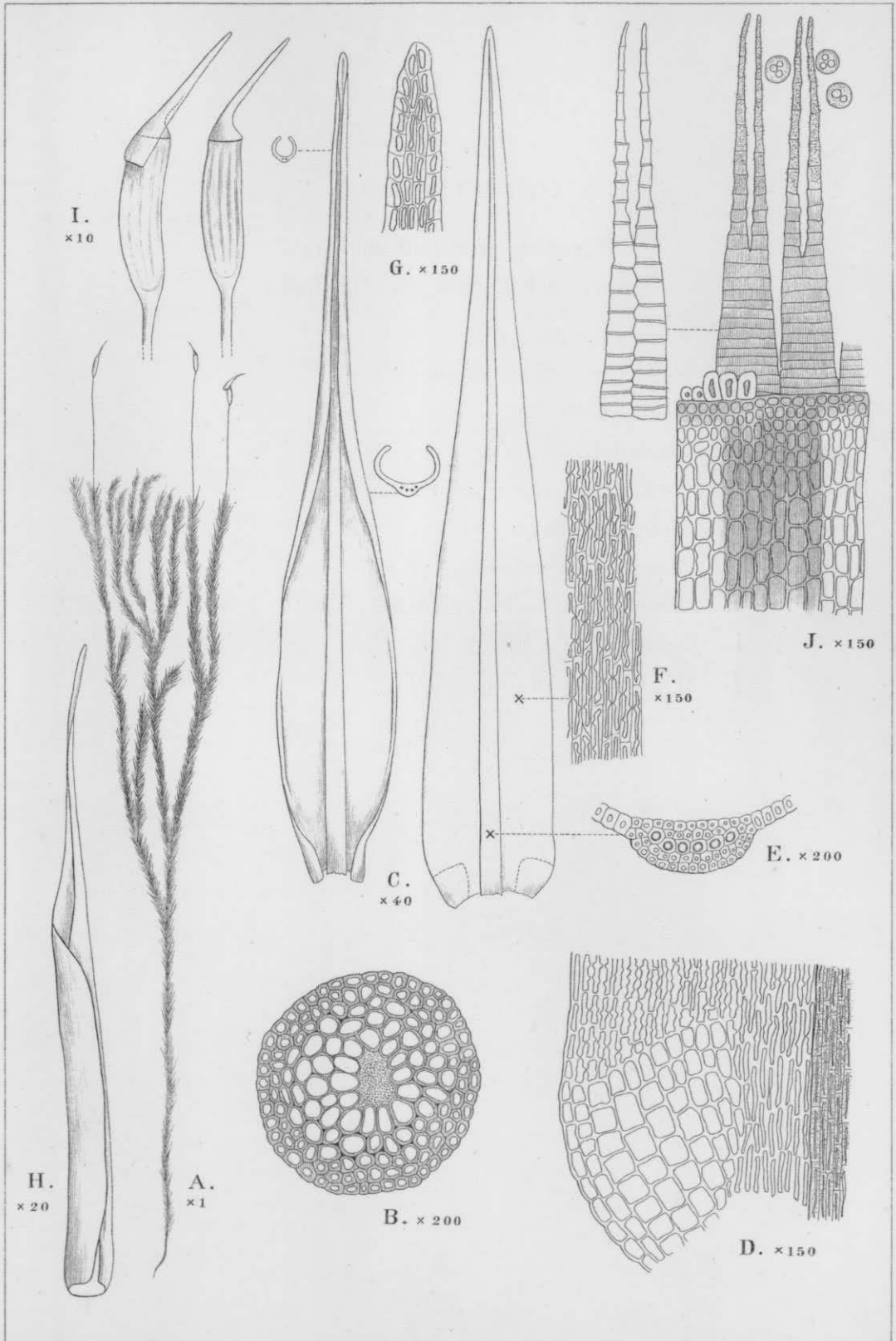
TABULA IV.

Explicatio tabulae IV.

Dicranum grönlandicum BRID.

var. sachalinense SH. OKAMURA.

- A. Planta fertilis ($\times 1$).
- B. Sectio transversa caulis ($\times 200$).
- C. Folia ($\times 40$).
- D. Basis folii ($\times 150$).
- E. Sectio transversa nervi ($\times 200$).
- F. Cellulae folii ($\times 150$).
- G. Apex folii ($\times 150$).
- H. Bracta perichaetialia intima ($\times 20$).
- I. Sporangia ($\times 10$).
- J. Parus peristomii ($\times 150$).



Sh. Okamura del.

Dicranum grönlandicum BRID.
var. *sachalinense* SH. OKAMURA.

SHÛTAI OKAMURA:

CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA V.

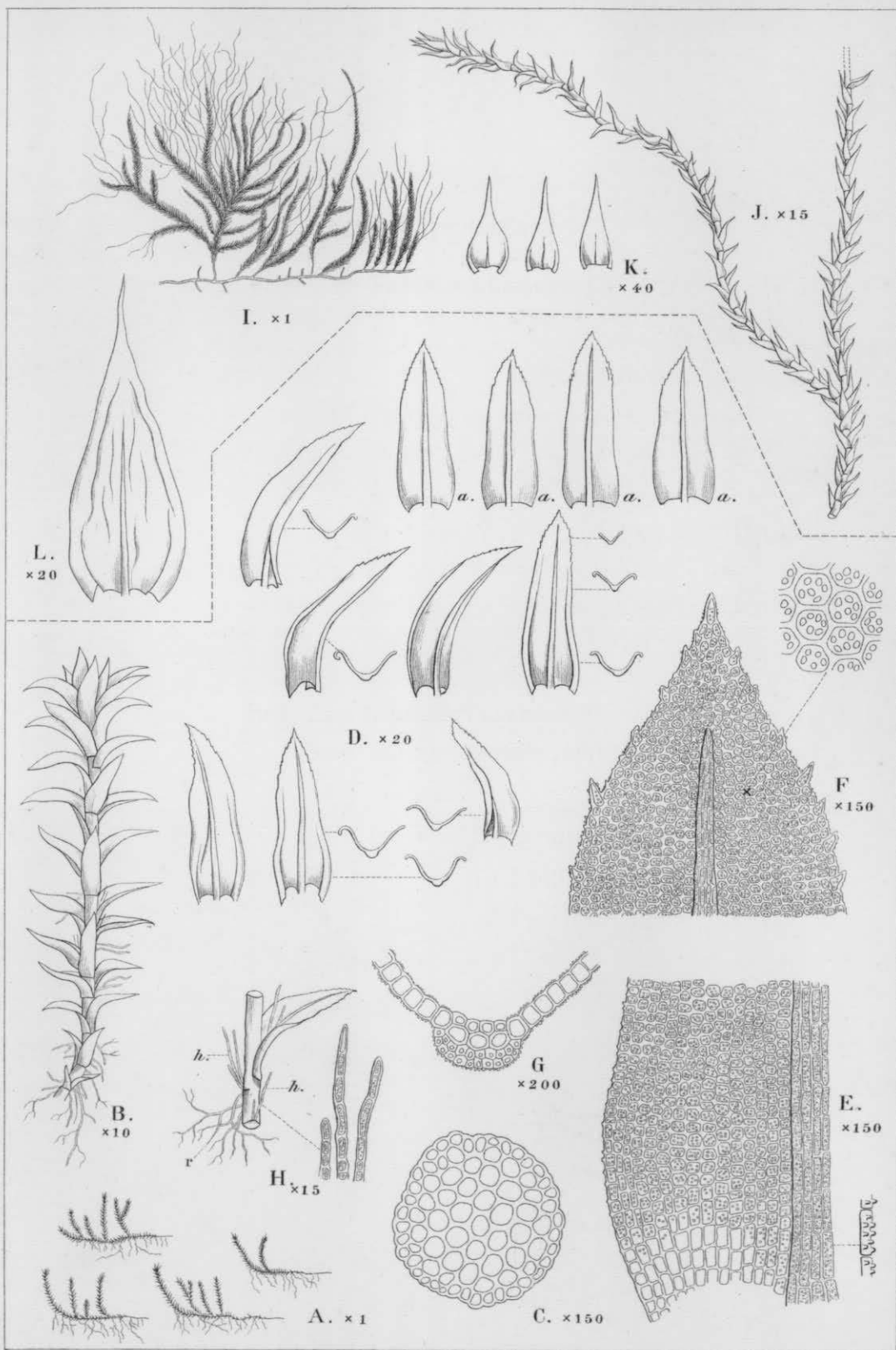
Explicatio tabulae V.

A-H. Leptodontium Nakaii SH. OKAMURA.

- A.** Plantae ($\times 1$).
- B.** Ramus ($\times 10$).
- C.** Sectio transversa caulis ($\times 150$).
- D.** Folia rami, a. folium explicatum ($\times 20$).
- E.** Basis folii ($\times 150$).
- F.** Apex folii ($\times 150$).
- G.** Sectio transversa nervi ($\times 200$).
- H.** Pars rami, h. pili, r. radiculae ($\times 15$).

**I-L. Okamuraea cristata BROTH. var.
multiflagellifera SH. OKAMURA.**

- I.** Planta ($\times 1$).
- J.** Pars flagelli ($\times 15$).
- K.** Folia flagelli ($\times 40$).
- L.** Folia rami ($\times 20$).



Sh. Okamura del.

A-H. *Leptodontium Nakaii* SH. OKAMURA.
 I-L. *Okamuraea cristata* BROTH.
 var. *multiflagellifera* SH. OKAMURA.

SHÛTAI OKAMURA:

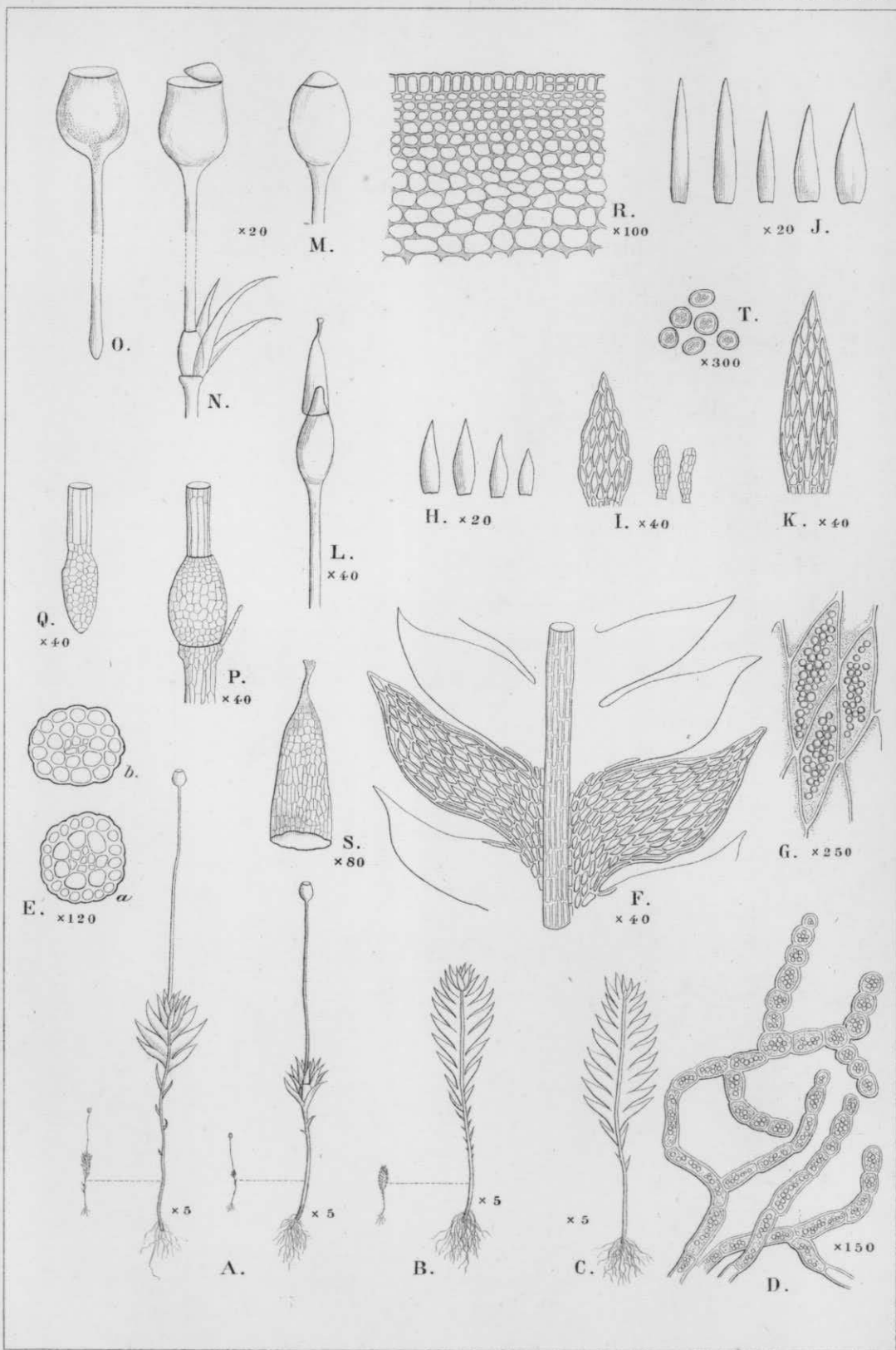
CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA VI.

Explicatio tabulae VI.

Schistostega osmundacea (DICK.) MOHR.

- A. Planta fertilis ($\times 1$ et $\times 5$).
- B. Planta mascula ($\times 1$ et $\times 5$).
- C. Planta sterilis ($\times 5$).
- D. Thallode praeditae ($\times 150$).
- E. Sectio transversa caulis, a. inferior, b. superior ($\times 120$).
- F. Pars caulis foliosi ($\times 40$).
- G. Cellulae foliorum. ($\times 250$).
- H. Folia perigonialia ($\times 20$).
- I. Folia perigonialia et antheridia ($\times 40$).
- J. Bractee perichaetialii ($\times 20$).
- K. „ „ ($\times 40$).
- L. Sporangium juvenum ($\times 40$).
- M. Sporangia matura ($\times 20$).
- N. Sporangium et Vaginula ($\times 20$).
- O. Sporangium deoperculatum ($\times 20$).
- P. Vaginula ($\times 40$).
- Q. Basis setae ($\times 40$).
- R. Pars thecae ($\times 100$).
- S. Calyptra ($\times 80$).
- T. Spori ($\times 300$).



Sh. Okamura del.

Schistostega osmundacea (DICK.) MOHR.

ひかりごけ (HIKARI-GOKE)

SHŪTAI OKAMURA:

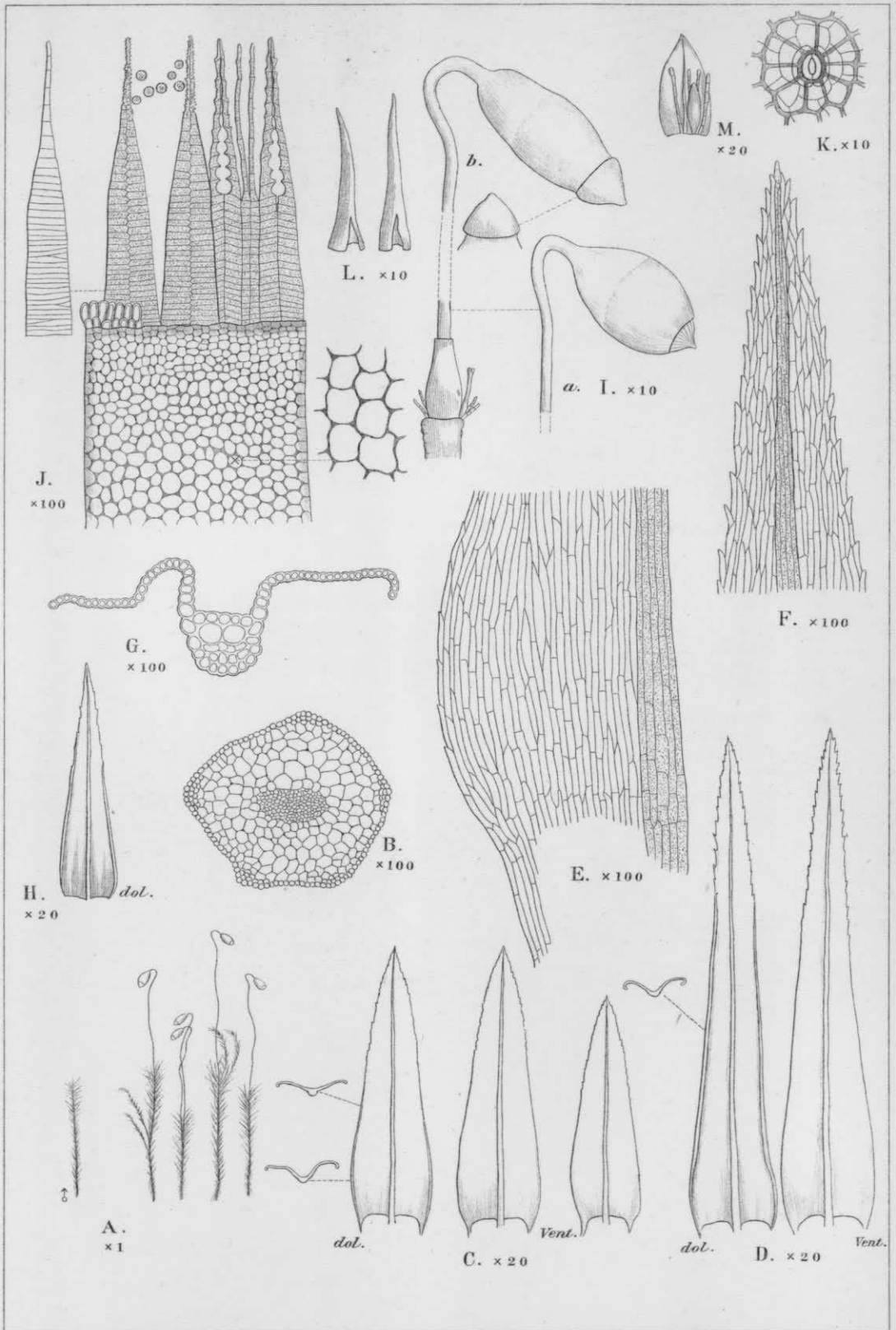
CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA VII.

Explicatio tabulae VII.

Mniobryum nipponense SH. OKAMURA.

- A. Plantae ($\times 1$).
- B. Sectio transversa caulis ($\times 100$).
- C. Folia infima ($\times 20$).
- D. Folia superiora ($\times 20$).
- E. Basis folii ($\times 100$).
- F. Apex folii ($\times 100$).
- G. Sectio transversa folii ($\times 400$).
- H. Bracta perichaetialia intima ($\times 20$).
- I. Vaginula et Sporangia, a. deoperculatum, b. operculatum ($\times 10$).
- J. Parus peristomii et Spori ($\times 100$).
- K. Stoma ($\times 100$).
- L. Calyptra ($\times 10$).
- M. Folium perigonalium, Antheridium et Paraphyses. ($\times 20$).



Sh. Okamura del.

Mniobryum nipponense SH. OKAMURA.

SHÛTAI OKAMURA:

CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

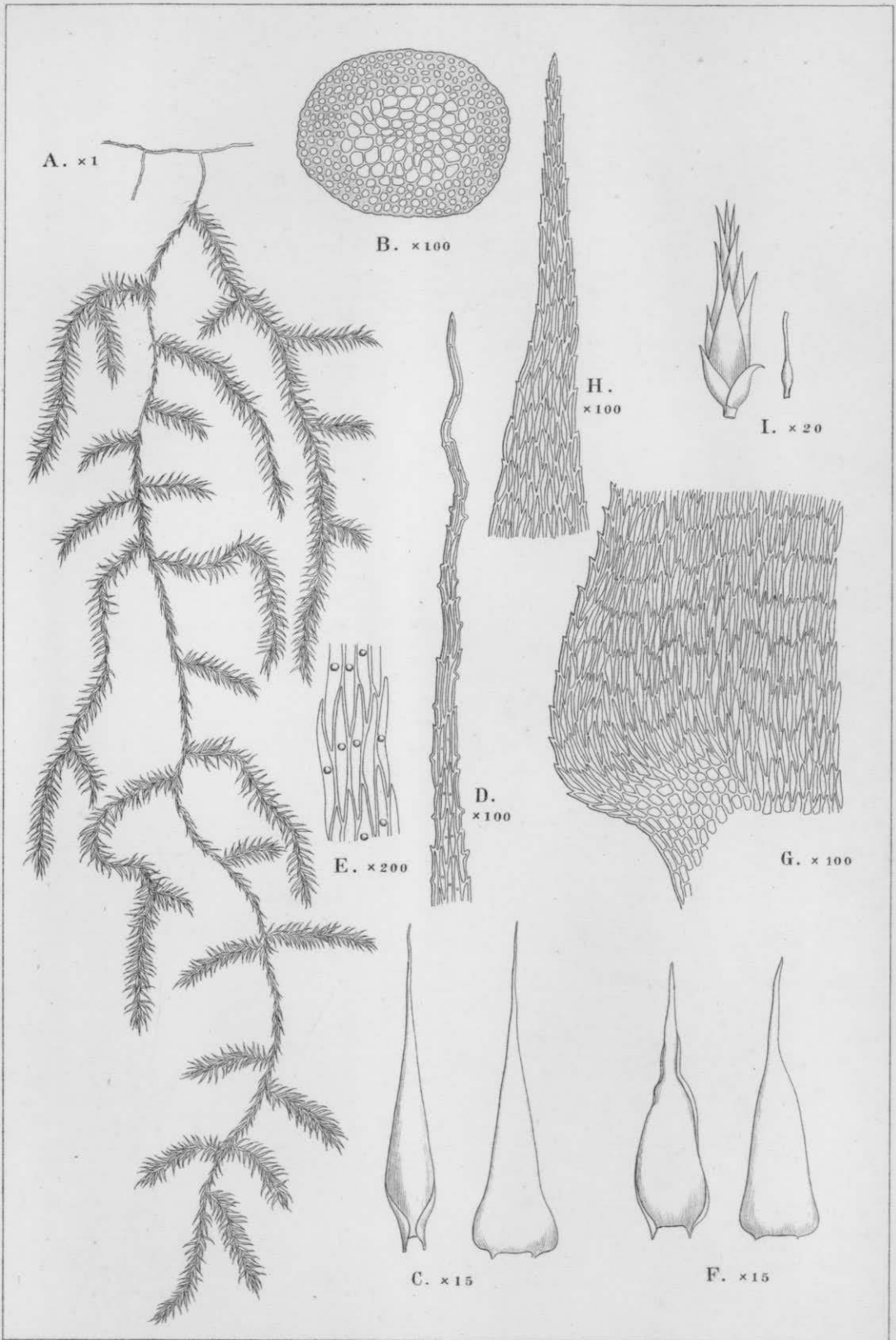
TABULA VIII.

Explicatio tabulae VIII.

Barbella Determesii (REN ET CARD.) FLEISCH.

var. akusoensis SH. OKAMURA.

- A. Planta ($\times 1$).
- B. Sectio transversa caulis ($\times 100$).
- C. Folia caulina ($\times 15$).
- D. Apex folii caulini ($\times 100$).
- E. Cellulae e parte medio folii caulini ($\times 200$).
- F. Folia rami ($\times 15$).
- G. Basis folii rami ($\times 100$).
- H. Apex folii rami ($\times 100$).
- I. Flores feminei ($\times 20$).



Sh. Okamura del.

Barbella Determesii (REN. ET CARD.) FLEISCH.
var. *akusoensis* SH. OKAMURA.

SHÛTAI OKAMURA:

CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

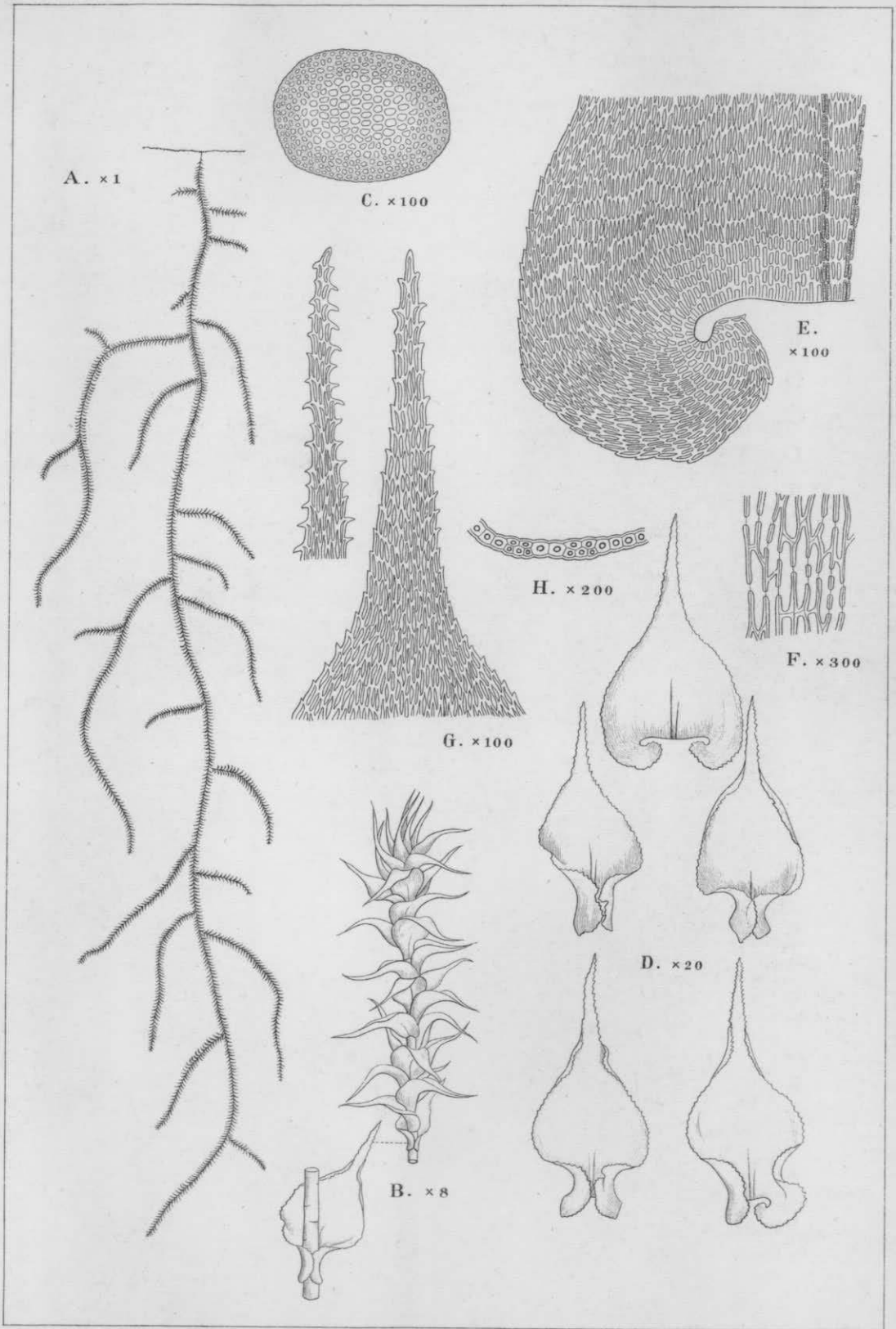
TABULA IX.

Explicatio tabulae IX.

Meteoriella soluta (MITT.) SH. OKAMURA.

var. kudoii SH. OKAMURA.

- A.** Planta ($\times 1$).
- B.** Pars rami ($\times 8$).
- C.** Sectio transversa caulis ($\times 100$).
- D.** Folia caulinum ($\times 20$).
- E.** Basis folii ($\times 100$).
- F.** Cellulae e parte basi folii ($\times 300$).
- G.** Apex folii ($\times 100$).
- H.** Sectio transversa nervi ($\times 200$).



Sh. Okamura del.

Meteoriella soluta (MITT.) SH. OKAMURA.
var. *Kudoi* SH. OKAMURA.

SHÛTAI OKAMURA:

CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA X.

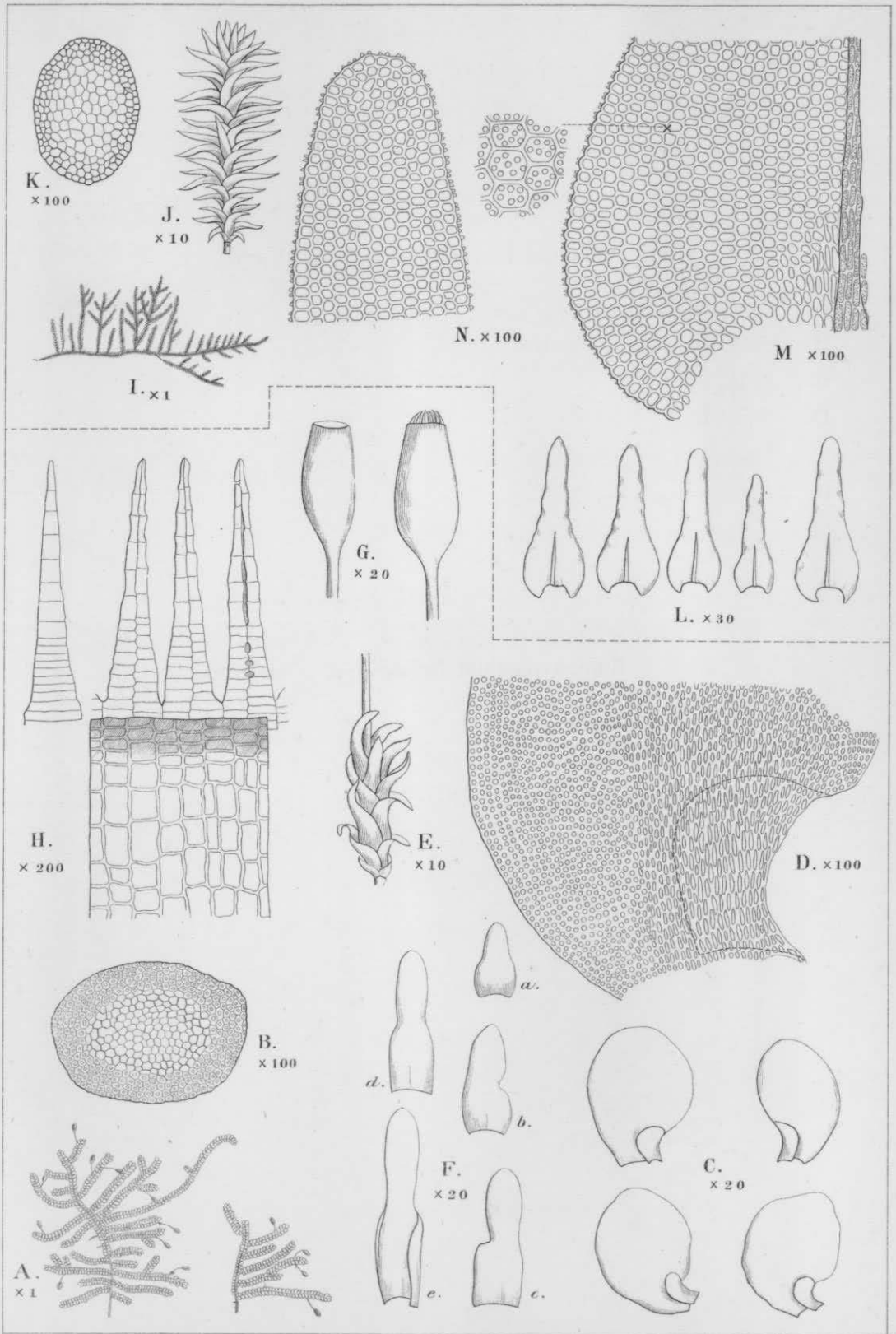
Explicatio tabulae X.

A-H. Homalia laevidentata SH. OKAMURA.

- A. Plantae fertiles ($\times 1$).
- B. Sectio transversa caulis ($\times 100$).
- C. Folia ($\times 20$).
- D. Basis folii ($\times 100$).
- E. Ramulus perichaetialis ($\times 10$).
- F. Bractae perichaetiales, a. b. c. d. externae, e. intimae. ($\times 20$).
- G. Sporangia deoperculatum ($\times 20$).
- H. Pars peristomii ($\times 200$).

I.-N. Haplohymenium Nakajii SH. OKAMURA.

- I. Planta ($\times 1$).
- J. Pars rami ($\times 10$).
- K. Sectio transversa caulis ($\times 100$).
- L. Folia rami ($\times 30$).
- M. Basis folii ($\times 100$).
- N. Apex folii ($\times 100$).



Sh. Okamura del.

A-H. *Homalia laevidentata* SH. OKAMURA.

I-N. *Haplohymenium Nakajii* SH. OKAMURA.

SHÛTAI OKAMURA:

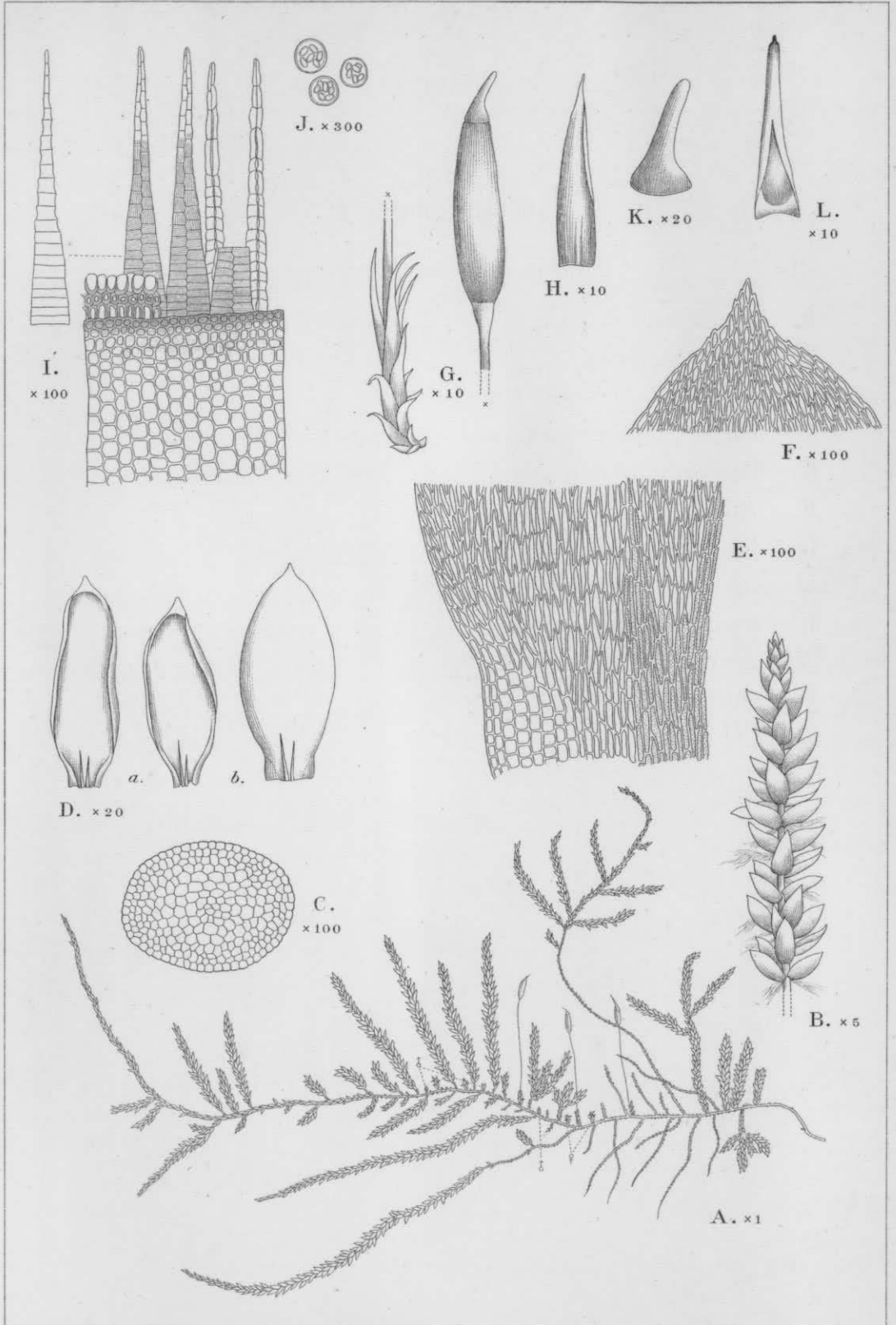
CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA XI.

Explicatio tabulae XI.

Entodon Andōi SH. OKAMURA.

- A.** Planta fertilis ($\times 1$).
- B.** Pars rami ($\times 5$).
- C.** Sectio transversa caulis ($\times 100$).
- D.** Folia, a. folium naturale, b. folium explicatum ($\times 20$).
- E.** Basis folii ($\times 100$).
- F.** Apex folii ($\times 100$).
- G.** Ramulus perichaetialis et Sporangium ($\times 10$).
- H.** Bracta perichaetialia intima ($\times 10$).
- I.** Pars peristomii ($\times 100$).
- J.** Spori ($\times 300$).
- K.** Operculum ($\times 20$).
- L.** Calyptra ($\times 10$).



Sh. Okamura del.

Entodon Andōi SH. OKAMURA.

SHÛTAI OKAMURA:

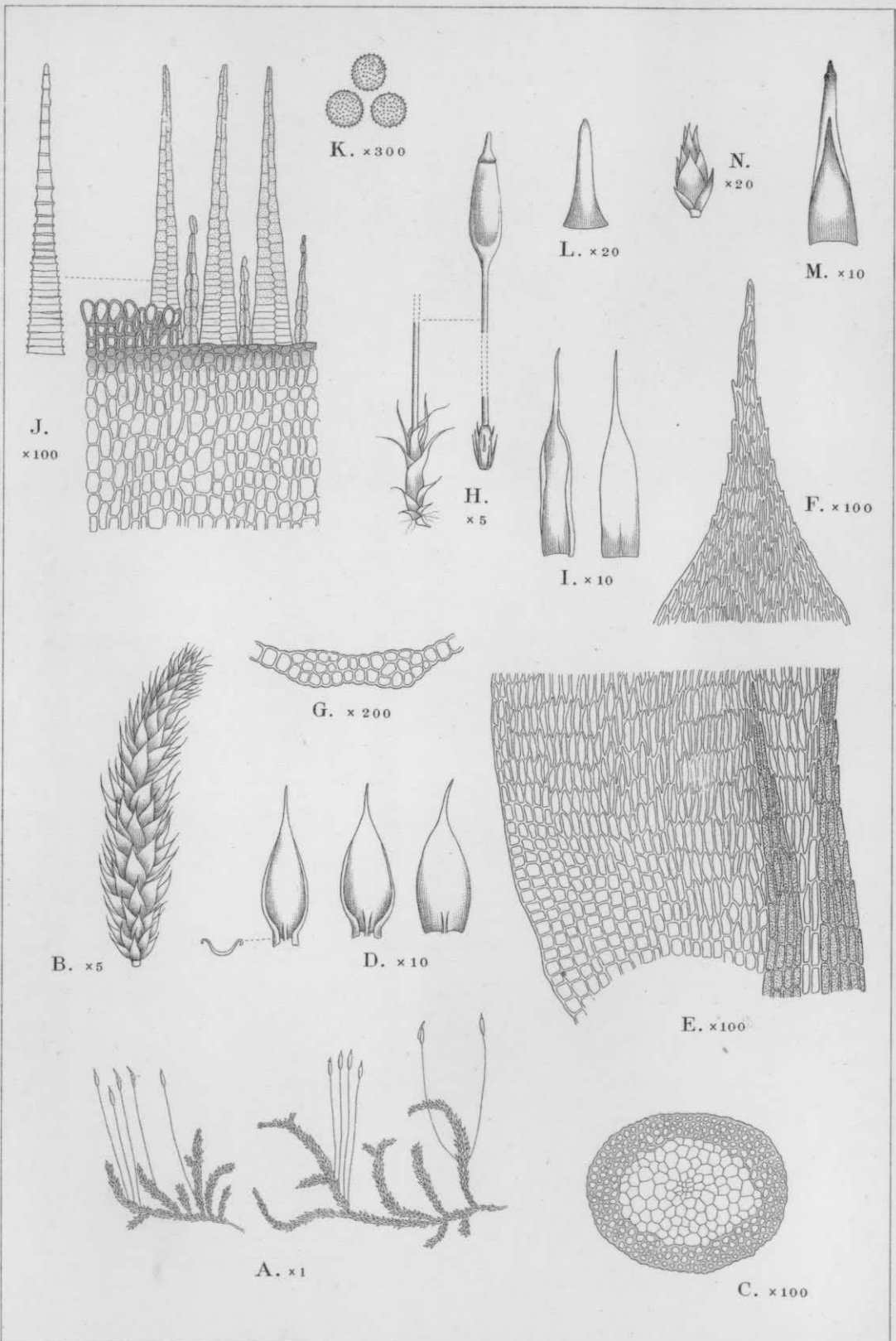
CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA XII.

Explicatio tabulae XII.

Entodon Ôhinatae SH. OKAMURA.

- A. Plantae fertiles ($\times 1$).
- B. Pars rami ($\times 5$).
- C. Sectio transversa caulis ($\times 100$).
- D. Folia rami ($\times 10$).
- E. Basis folii ($\times 100$).
- F. Apex folii ($\times 100$).
- G. Sectio transversa nervi ($\times 200$).
- H. Ramulus perichaetialis et Sporangium ($\times 5$).
- I. Bractae perichaetii ($\times 10$).
- J. Pars peristomii ($\times 100$).
- K. Spori ($\times 300$).
- L. Operculum ($\times 20$).
- M. Calyptra ($\times 10$).
- N. Flores masculi ($\times 20$).



Sh. Okamura del.

Entodon Ôhinatae SH. OKAMURA.

SHÛTAI OKAMURA:

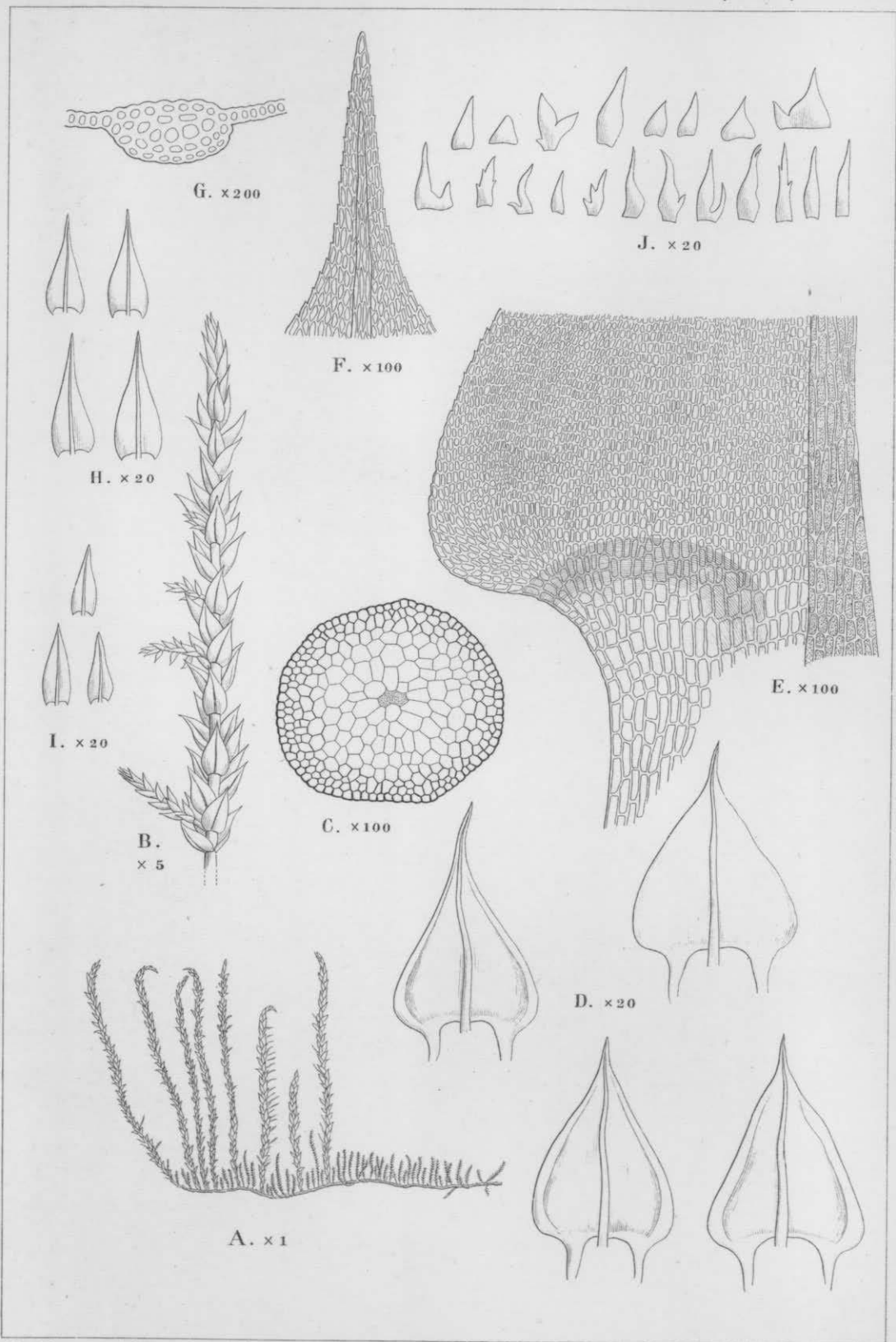
CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA XIII.

Explicatio tabulae XIII.

Hygroamblystegium latifolium SH. OKAMURA.

- A. Planta ($\times 1$).
- B. Parus rami ($\times 5$).
- C. Sectio transversa caulis ($\times 100$).
- D. Folia ($\times 20$).
- E. Basis folii ($\times 100$).
- F. Apex folii ($\times 100$).
- G. Sectio transversa nervi (200).
- H. Folia ramulia in caule ($\times 20$).
- I. Folia ramulia in ramis ($\times 20$).
- J. Paraphyllia ($\times 20$).



Sh. Okamura del.

Hygroamblystegium latifolium SH. OKAMURA.

SHÛTAI OKAMURA:

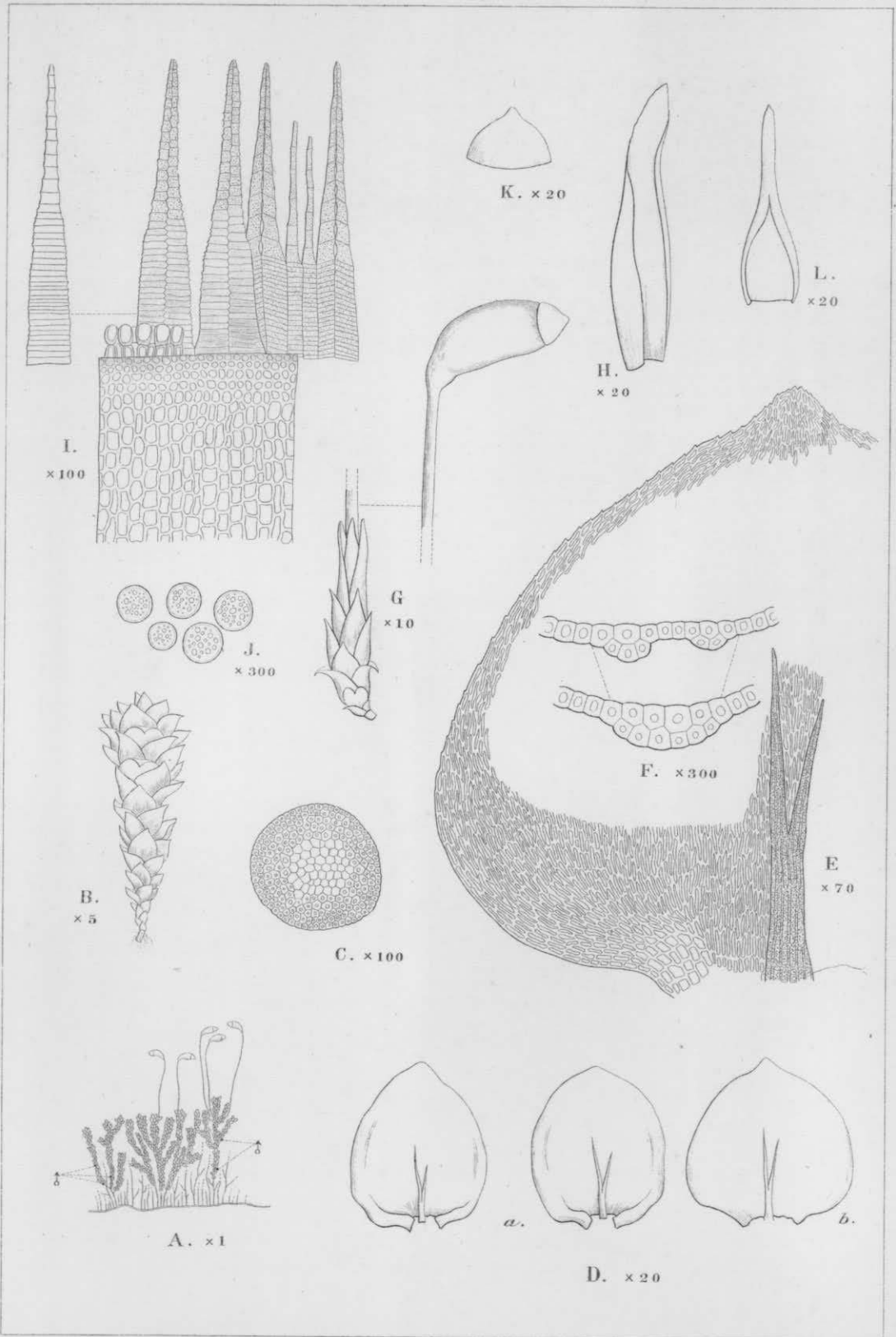
CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA XIV.

Explicatio tabulae XIV.

Hygrohypnum cordifolium SH. OKAMURA.

- A. Planta fertilis ($\times 1$).
- B. Pars ramuli ($\times 5$).
- C. Sectio transversa caulis ($\times 100$).
- D. Folia, a. folium naturale, b. folium explicatum ($\times 20$).
- E. Folium ($\times 70$).
- F. Sectio transversa nervi ($\times 300$).
- G. Ramulus perichaetialis et Sporangia ($\times 10$).
- H. Bracta perichaetialia intima ($\times 20$).
- I. Pars peristomii ($\times 100$).
- J. Spori ($\times 300$).
- K. Operculum ($\times 20$).
- L. Calyptra ($\times 20$).



Sh. Okamura del.

Hygrohypnum cordifolium SH. OKAMURA.

SHŪTAI OKAMURA:

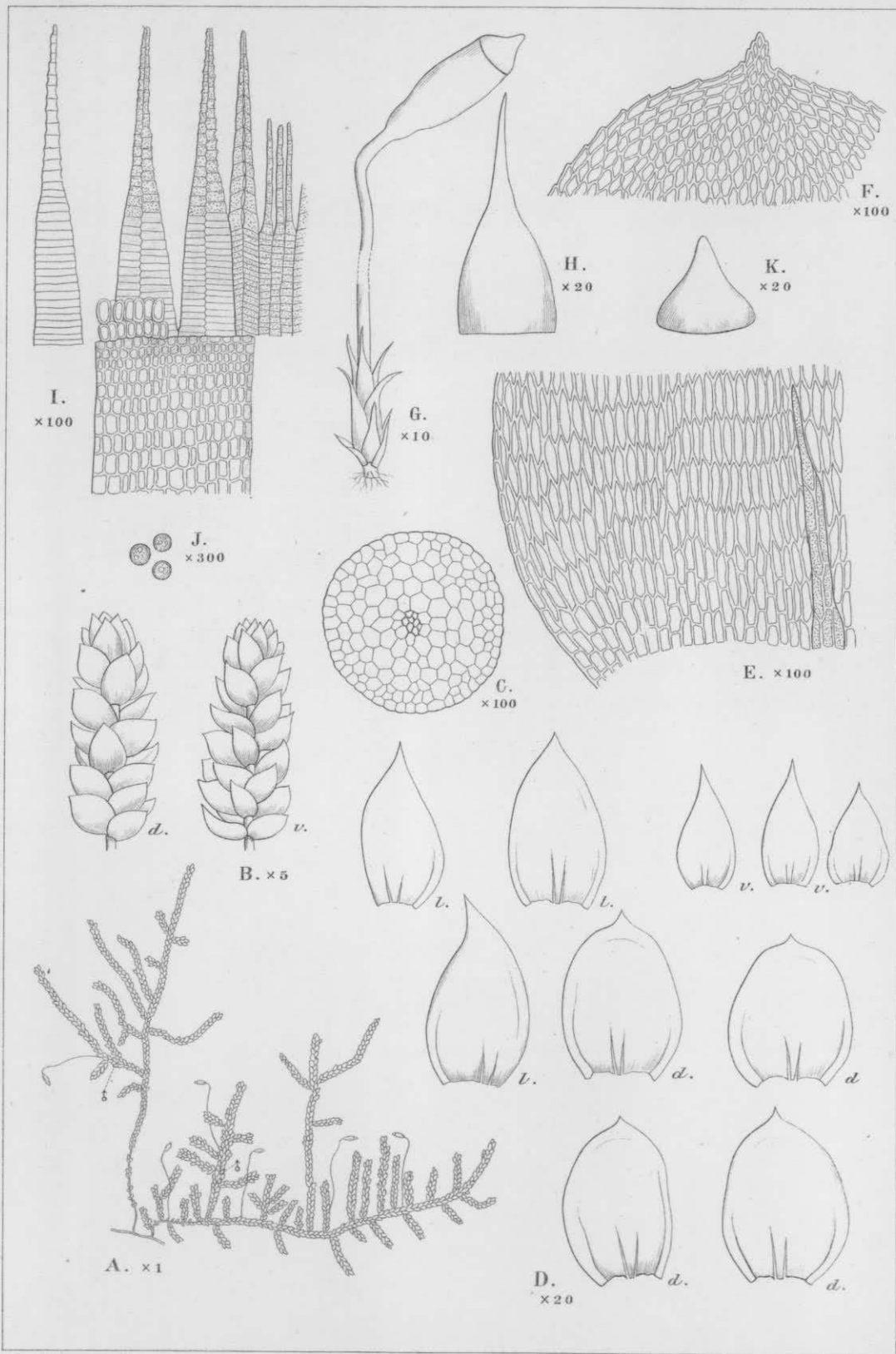
CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA XV.

Explicatio tabulae XV.

Ectropothecium rotundifolium SH. OKAMURA.

- A. Planta fertilis ($\times 1$).
- B. Partes ramuli, d. dorsalia, v. ventralia ($\times 5$).
- C. Sectio transversa caulis ($\times 100$).
- D. Folia, d. dorsalia, l. lateralialia, v. ventralia ($\times 20$).
- E. Basis folii ($\times 100$).
- F. Apex folii ($\times 100$).
- G. Ramulus perichaetialis et Sporangia ($\times 10$).
- H. Bractea perichaetialis intima ($\times 20$).
- I. Pars peristomii ($\times 100$).
- J. Spori ($\times 300$).
- K. Operculum ($\times 20$).



Sh. Okamura del.

Ectropothecium rotundifolium SH. OKAMURA.

SHÛTAI OKAMURA:

CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA XVI.

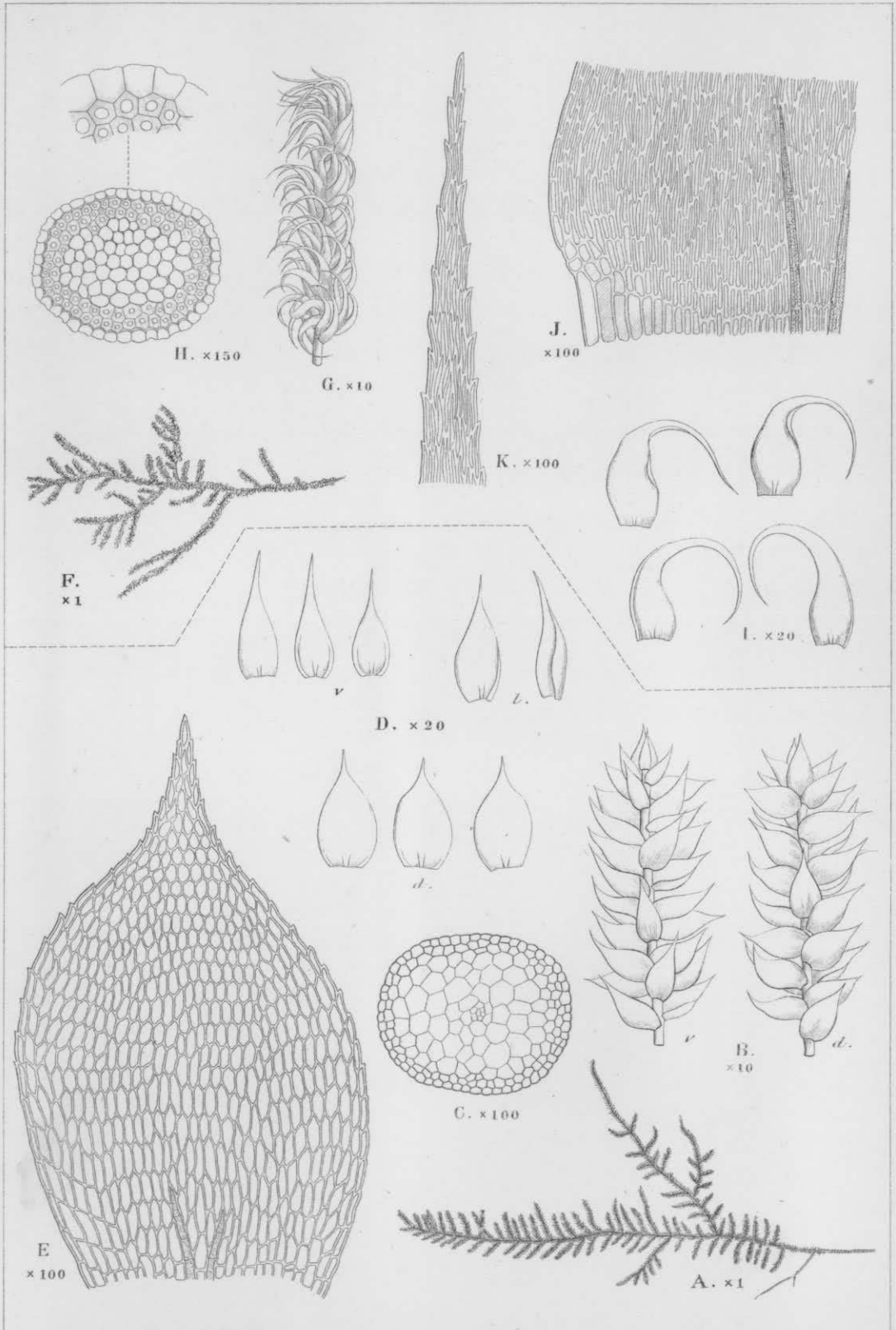
Explicatio tabulae XVI.

A-E. *Vesicularia Yajimae* SH. OKAMURA.

- A.** Planta ($\times 1$).
 - B.** Partes ramuli, d. dorsalia, v. ventralia ($\times 10$).
 - C.** Sectio transversa caulis ($\times 100$).
 - D.** Folia, d. dorsalia, l. lateralia, v. ventralia ($\times 20$).
 - E.** Folia dorsalia ($\times 100$).
-

F.-K. *Stereodon amblyostegius* MITT.

- F.** Planta ($\times 1$).
- G.** Pars ramuli ($\times 10$).
- H.** Sectio transversa caulis ($\times 150$).
- I.** Folia rami ($\times 20$).
- J.** Basis folii ($\times 100$).
- K.** Apex folii ($\times 100$).



Sh. Okamura del.

A-E. *Vesicularia Yajimae* SH. OKAMURA.

F-K. *Stereodon amblyostegius* MITT.

SHŪTAI OKAMURA:

CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

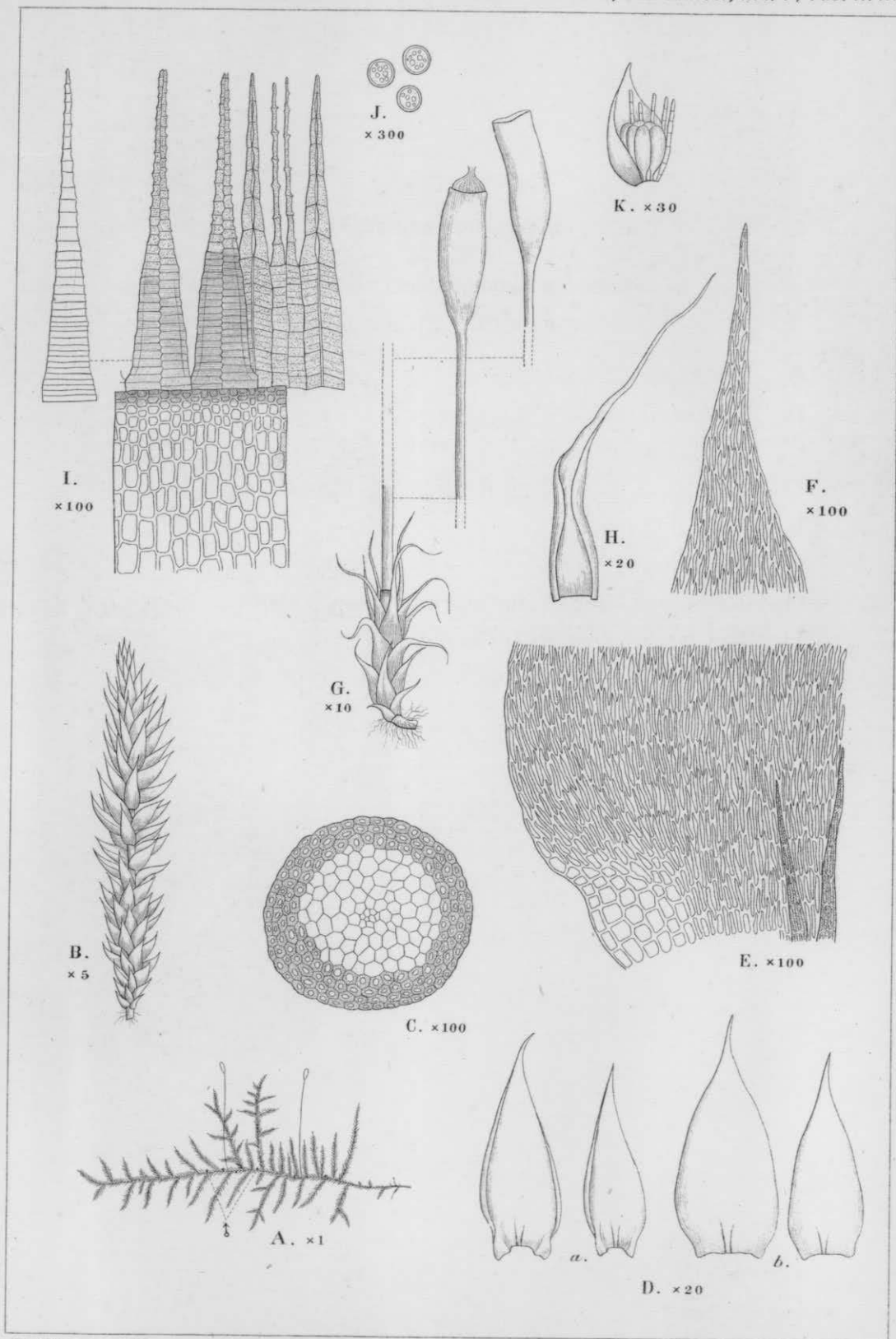
TABULA XVII.

Explicatio tabulae XVII.

Stereodon Haldanianus (GREB.) LINDB.

var. viridis SH. OKAMURA.

- A.** Planta fertilis ($\times 1$).
- B.** Pars rami ($\times 5$).
- C.** Sectio transversa caulis ($\times 100$).
- D.** Folia rami, a. Folium naturale, b. Folium explicatum ($\times 20$).
- E.** Basis folii ($\times 100$).
- F.** Apex folii ($\times 100$).
- G.** Ramulus perichaetialis et Sporangia ($\times 10$).
- H.** Bracta perichaetialis intima ($\times 20$).
- I.** Pars peristomii ($\times 100$).
- J.** Spori ($\times 300$).
- K.** Flores masculi ($\times 30$).



Sh. Okamura del.

Stereodon Haldanianus (GREB.) LINDB.
var. viridis SH. OKAMURA.

SHŪTAI OKAMURA:

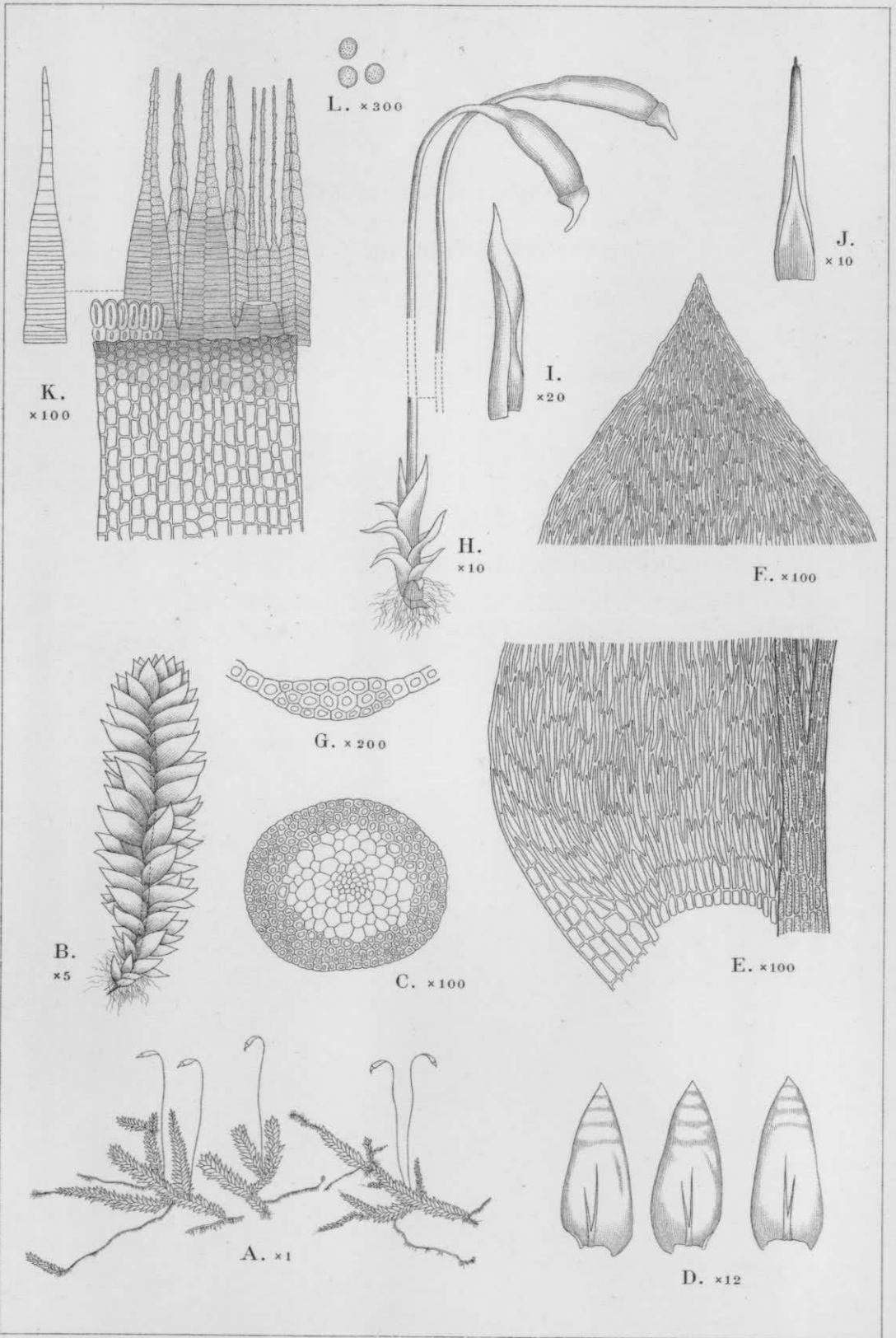
CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA XVIII.

Explicatio tabulae XVIII.

Plagiothecium Matsumurae SH. OKAMURA.

- A.** Plantae fertilis ($\times 1$).
- B.** Pars rami ($\times 5$).
- C.** Sectio transversa caulis ($\times 100$).
- D.** Folia ($\times 12$).
- E.** Basis folii ($\times 100$).
- F.** Apex folii ($\times 100$).
- G.** Sectio transversa nervi ($\times 200$).
- H.** Ramulus perichaetialis et Sporangia ($\times 10$).
- I.** Bracta perichaetialia intima ($\times 20$).
- J.** Calyptra ($\times 10$).
- K.** Pars peristomii ($\times 100$).
- L.** Spori ($\times 300$).



Sh. Okamura del.

Plagiothecium Matsumurae SH. OKAMURA.

SHŪTAI OKAMURA:

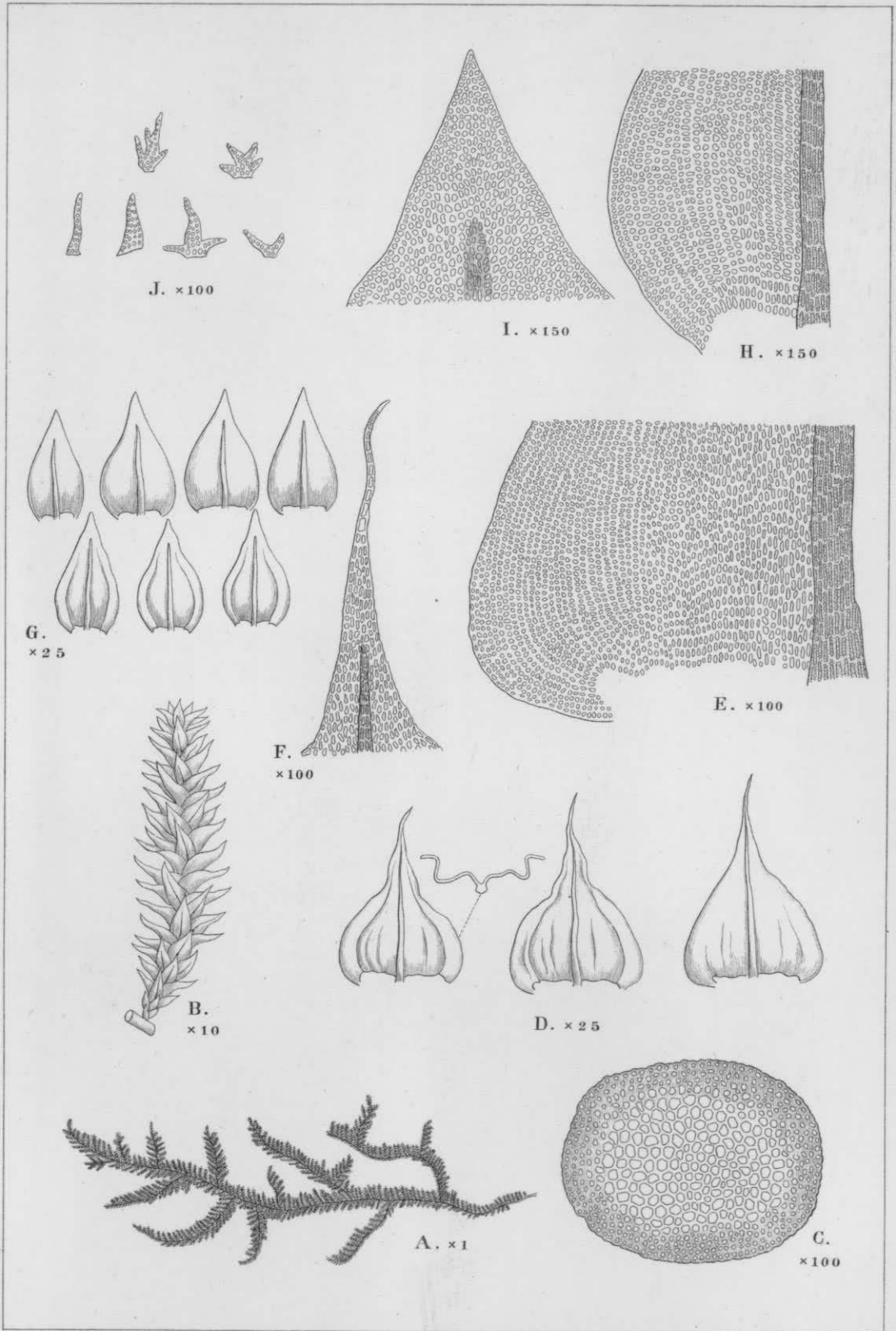
CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA XIX.

Explicatio tabulae XIX.

***Boulaya latifolia* SH. OKAMURA.**

- A. Planta sterilis ($\times 1$).
- B. Ramulus ($\times 10$).
- C. Sectio transversa caulis ($\times 100$).
- D. Folia caulina (25).
- E. Basis folii caulina ($\times 100$).
- F. Apex folii caulina ($\times 100$).
- G. Folia ramulina ($\times 25$).
- H. Basis folii ramulina ($\times 150$).
- I. Apex folii ramulina ($\times 150$).
- J. Paraphyllia ($\times 100$).



Sh. Okamura del.

Boulaya latifolia SH. OKAMURA.

SHŪTAI OKAMURA:

CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA XX.

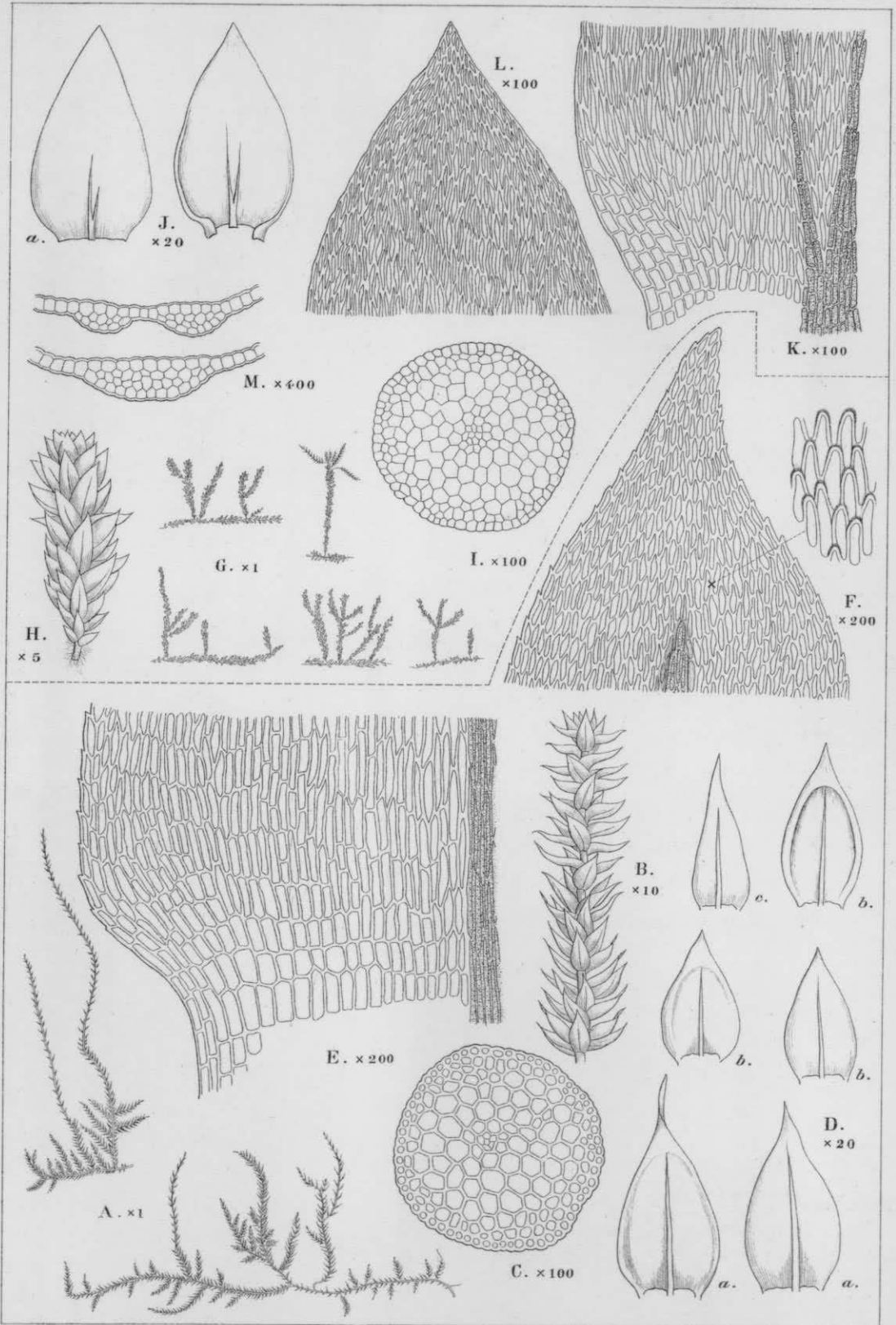
Explicatio tabulae XX.

A-F. **Bryhnia Nakanoi** SH. OKAMURA.

- A. Plantae ($\times 1$).
 - B. Pars rami ($\times 10$).
 - C. Sectio transversa caulis ($\times 100$).
 - D. Folia, a. folium caulinum, b. folium rami, c. folium fragelli ($\times 20$).
 - E. Basis folii ($\times 200$).
 - F. Apex folii ($\times 200$).
-

G-M. **Plagiothecium pallidum** SH. OKAMURA.

- G. Plantae ($\times 1$).
- H. Pars rami ($\times 5$).
- I. Sectio transversa caulis ($\times 100$).
- J. Folia, a. folium explicatum ($\times 20$).
- K. Basis folii ($\times 100$).
- L. Apex folii ($\times 100$).
- M. Sectio transversa nervi ($\times 400$).



Sh. Okamura del.

A-F. *Bryhnia Nakanoi* SH. OKAMURA.

G-M. *Plagiothecium pallidum* SH. OKAMURA.

SHŪTAI OKAMURA:

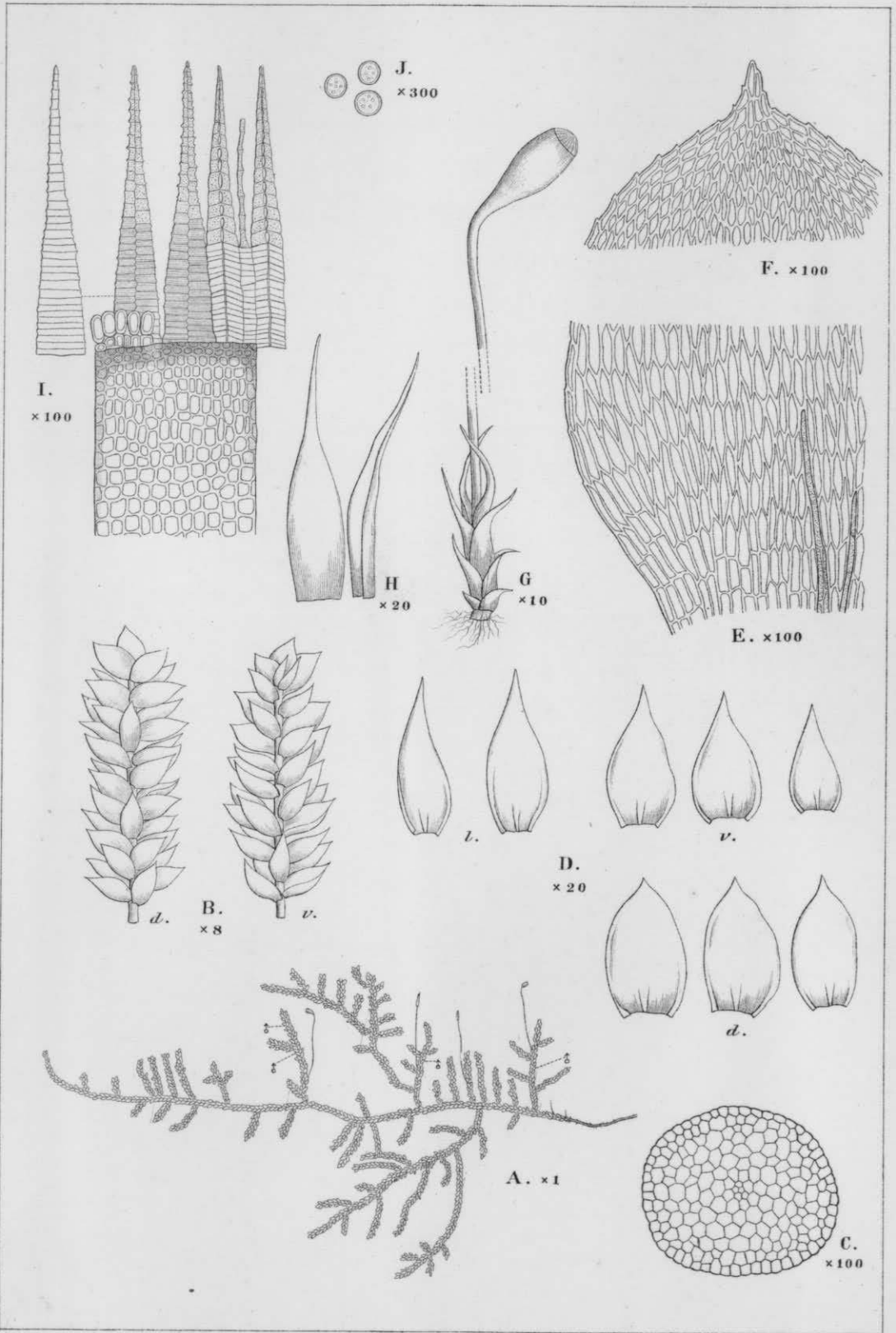
CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA XXI.

Explicatio tabulae XXI.

Vesicularia cuspidata SH. OKAMURA.

- A. Planta fertilis ($\times 1$).
- B. Partes ramuli, d. dorsalia, v. ventralia ($\times 8$).
- C. Sectio transversa caulis ($\times 100$).
- D. Folia, d. dorsalia, l. lateralalia, v. ventralia ($\times 20$).
- E. Basis folii ($\times 100$).
- F. Apex folii ($\times 100$).
- G. Ramulus perichaetialis et Sporangium ($\times 10$).
- H. Bractae perichaetii intimae ($\times 20$).
- I. Pars peristomii ($\times 100$).
- J. Spori ($\times 300$).



Sh. Okamura del.

Vesicularia cuspidata SH. OKAMURA.

SHÛTAI OKAMURA:

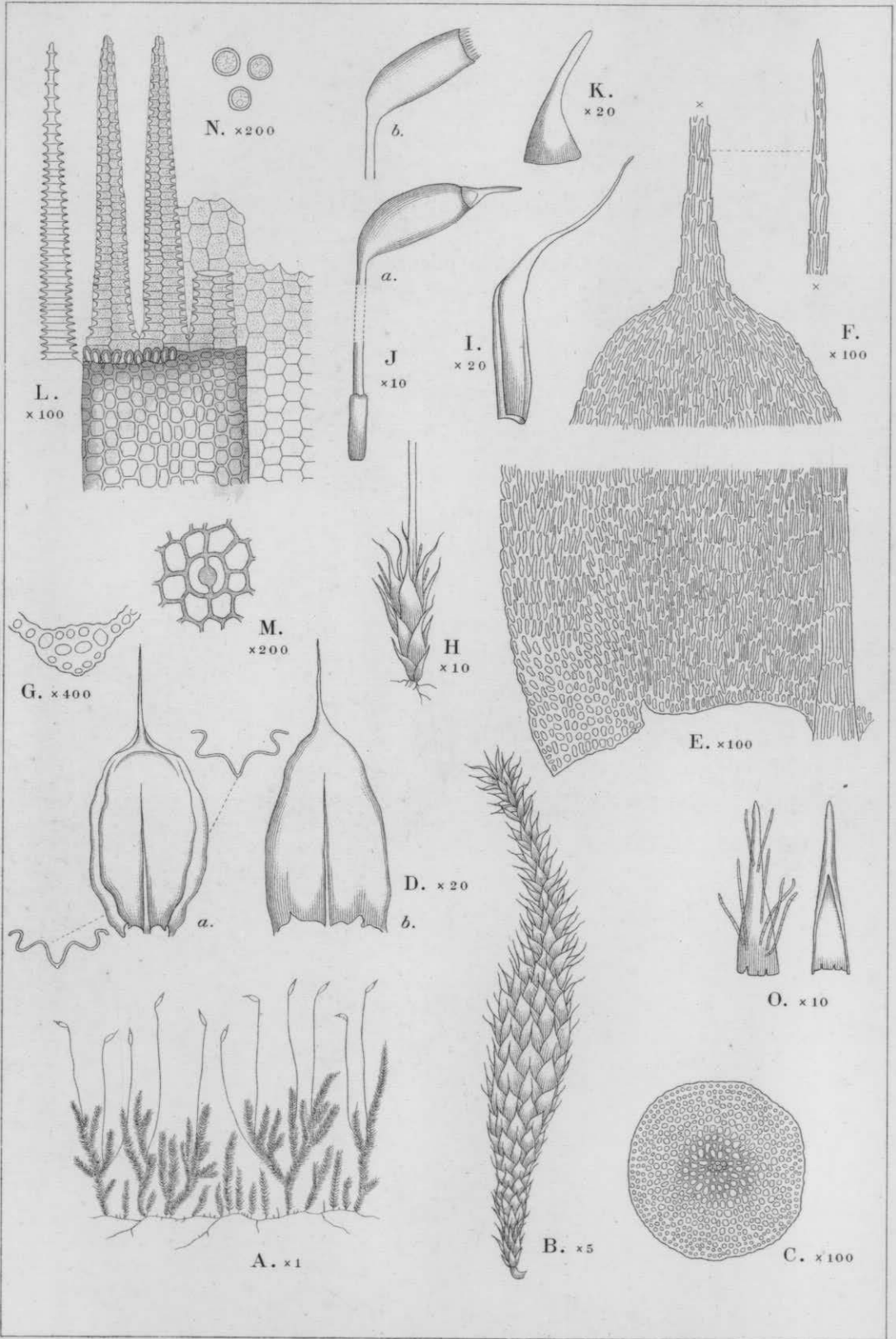
CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA XXII.

Explicatio tabulae XXII.

Okamuraea plicata CARD.

- A. Planta fertilis ($\times 1$).
- B. Pars ramuli ($\times 5$).
- C. Sectio transversa rami ($\times 100$).
- D. Folia rami, a. Folium naturale, b. Folium explicatum ($\times 20$).
- E. Basis folii ($\times 100$).
- F. Apex folii ($\times 100$).
- G. Sectio transversa nervi ($\times 400$).
- H. Ramulus perichaetialis ($\times 10$).
- I. Bracta perichaetialia intima ($\times 20$).
- J. Sporangia, a. operculatum, b. deoperculatum ($\times 10$).
- K. Operculum ($\times 20$).
- L. Pars peristomii ($\times 100$).
- M. Stoma ($\times 200$).
- N. Spori ($\times 200$).
- O. Calyptra ($\times 10$).



Sh. Okamura del.

Okamuraea plicata CARD.

SHÛTAI OKAMURA:

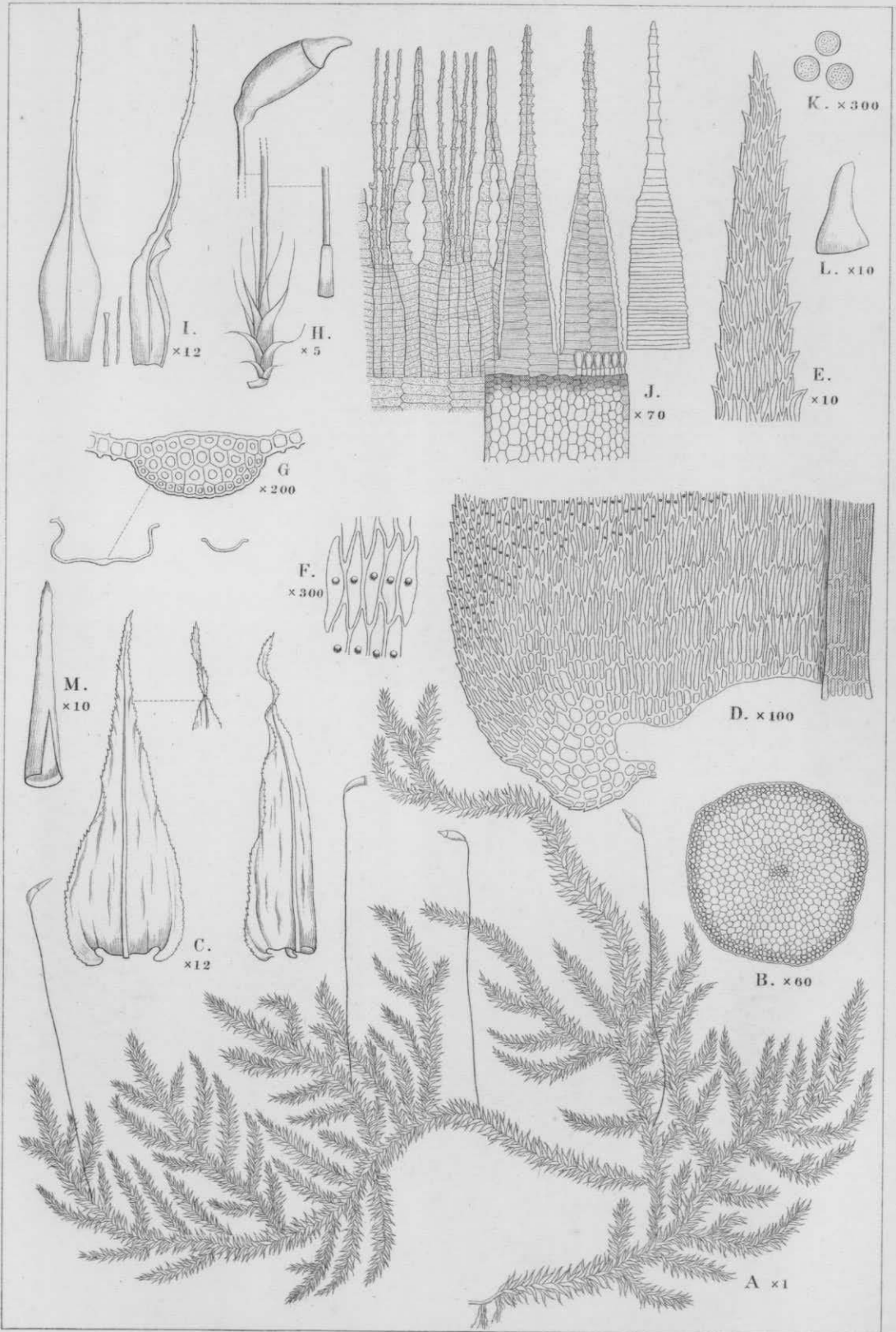
CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA XXIII.

Explicatio tabulae XXIII.

Matsumuraea japonica SH. OKAMURA.

- A. Planta fertilis ($\times 1$).
- B. Sectio transversa caulis ($\times 60$).
- C. Folia ($\times 12$).
- D. Basis folii ($\times 100$).
- E. Apex folii ($\times 100$).
- F. Cellulae mediae folii ($\times 300$).
- G. Sectio transversa nervi ($\times 200$).
- H. Ramulus perichaetialis et Sporangium ($\times 5$).
- I. Bracta perichaetialia intima ($\times 12$).
- J. Pars peristomii ($\times 70$).
- K. Spori ($\times 300$).
- L. Operculum ($\times 10$).
- M. Calyptra ($\times 10$).



Sh. Okamura del.

Matsumuraea japonica SH. OKAMURA.

SHÛTAI OKAMURA:

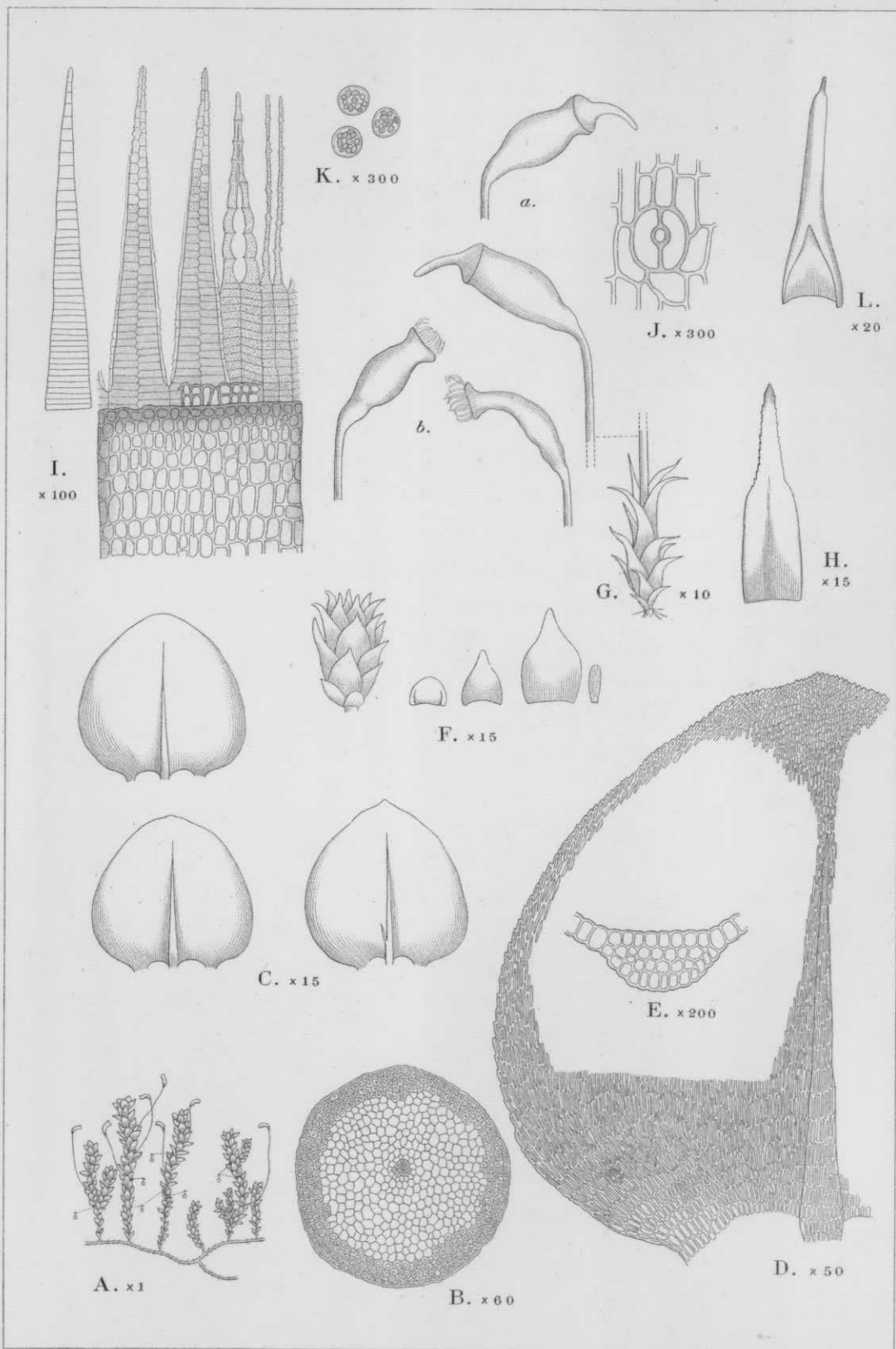
CONTRIBUTIONES NOVAE AD FLORAM BRYOPHYTON JAPONICAM.

TABULA XXIV.

Explicatio tabulae XXIV.

Oxyrrhynchium Sasaokae SH. OKAMURA.

- A.** Planta fertilis ($\times 1$).
- B.** Sectio transversa caulis ($\times 60$).
- C.** Folia rami ($\times 15$).
- D.** Pars folii ($\times 50$).
- E.** Sectio transversa nervi ($\times 200$).
- F.** Flores masculi et folia perigonialia ($\times 15$).
- G.** Ramulus perichaetialis et sporangia, a. sporangia operculatum,
b. sporangia deoperculatum ($\times 10$).
- H.** Bracta perichaetialia intima ($\times 15$).
- I.** Pars peristomii ($\times 100$).
- J.** Stoma ($\times 300$).
- K.** Spori ($\times 300$).
- L.** Calyptra ($\times 20$).



Sh. Okamura del.

Oxyrrhynchium Sasaokae SH. OKAMURA.