

Compositae Japonicae

Pars Sexta

auctore

Siro KITAMURA

Cum 7 Tabulis

(Opus acceptum d. 3 m. Aug. 1957)

Taraxacum WIGG.

Taraxacum (ZINN, 1757 pro parte) WIGGERS, Prism. Fl. Holsat. (1780) p. 56—nomen conservandum ad *Hedynois* SCOP., Fl. Carn. ed. 2, II (1772) p. 99.—HANDEL-MAZT., Monogr. Gatt. *Taraxacum* (1907) p. 1.—KITAMURA in Japanese Journal of Botany XIII (1948) p. 487.

Taraxacum HALL, En. Stirp. Helv. II (1742) p. 739 excl. spec., Stirp. Helv. I (1768) p. 23 excl. spec. 2 a.—JUSS., Gen. (1789) p. 169.—ST.-HILL., Expos. I (1805) p. 375.—DC., Fl. Franc. IV (1805) p. 44, V (1815) p. 450, Prodr. VII (1838) p. 145.—CASS. in Dict. 25 (1822) p. 62, 48 (1827) p. 422, 60 (1830) p. 568.—SPACH, Vég. Phan. X (1841) p. 7, 46.—LESS., Syn. Comp. (1832) p. 135.—TORREY et GRAY, Fl. North. Amer. II (1841) p. 493.—BENTH. et HOOKER f., Gen. Pl. II (1873) p. 522.—HOFFMANN in Pflanzenfam. IV-5 (1894) p. 370.

Taraxacum BOEHM, in LUDW, Gen. Pl. ed. 3 (1760) p. 175.—DAHLST. in LINDMANN, Svensk Fanerogamen Flora (1918) p. 559.

Leontodon L., Gen. Pl. ed. V (1753) p. 349 pro parte.—ADANSON, Fam. Pl. II (1763) p. 112.

Lasiopus DON in SWEET, The Brit. Flower Garden II (1836) t. 346.

Caramanica TIN., Pl. Rar. Sic. (1846) p. 3.

Capitula homogama liguliflora. Involucrum campanulatum vel oblongum basi rotundatum aut turbinatum, squamae membranaceo-herbaceae, interiores uniseriales erectae subaequales basi interdum connatae post anthesin immutatae, exteriores 2-3seriales interioribus breviores adpressae apice patentes vel e basi reflexae, lineares—late ovatae, corniculatae vel ecorniculatae virides, rosascentes, atrovirides vel dilute virides, interdum pruinosae, albo-marginatae. Receptaculum planum. Corollae ligulatae apice truncatae 5-dentatae raro tubulosae, flavae, albae (aut aurantiacae), marginales saepe dorso late atro-purpureo-striatae, tubo glabro a. puberulo. Styli rami tenues obtusiusculi hispiduli. Achenia oblonga v. angusta teretia, 4-5 gona vel a dorso compressa costata basi attenuata, superne spinulosotuberculata in cuspidem brevem v. elongatam sensim vel abrupte abeuntia, rostro tenui longo vel brevi praedita. Pappi setae copicsae simplices tenues albescentes, (violascentes v.

brunnescentes) apice attenuatae scabrae inaequales. Herbae perennes subacaules. Folia omnia radicalia integra, dentata, sinuata vel runcinato-pinnatifida—secta. Scapi aphylli 1-cephali v. rarius apice ramosi 2–3-cephali, vacui, sub anthesi erecti vel ascendentes post anthesin terrae adpressae in fructu erecti. Capitula mediocria v. majuscula sub anthesi erecta raro nutantia.

Distr. Per regiones temperatas frigidores et subcalidiores hemisphaerii borealis late dispersae, etiam in hemisphaerico australi et hic inde tropicos obviae, in pluribus tamen locis inquilinae.

Sect. *Borealia*

Taraxacum sect. **Borealia** HANDEL-MAZZETTI, Monogr. *Tarax.* (1907) p. 58.

Achenia rostrata straminea vel brunnescentia. Pappus albescens. Involucrum viride vel atroviride, squamae exteriores adpressae vel apice patentes. Folia herbacea viridia.

Involucrum atroviride. Corolla intense flava. Caulis ad collum plerumque dense fusco-squamato **Ceratophora.**
Involucrum viride. Corolla flava vel albescens. Caulis ad collum parce fusco squamato **Mongolica.**

Subsect. 1 Ceratophora

Subsect. **Ceratophora** HAND.-M.ZT., Monogr. *Tar.* (1907) p. 58.—DAHLST. in C. A. LINDMAN, Svensk Fanerogamflora (1918) p. 539 et 562, in Acta Horti Göth. II (1926) p. 166.

Achenia straminea aut brunnescentia superne spinuloso-tuberculata apice in cuspidem sensim abeuntia. Corolla intense flava. Involucrum atroviride, interdum pruinose, squamae exteriores adpressae ovatae—lineares apicem versus leviter rosascentes ecorniculatae vel corniculatae. Caulis ad collum saepe dense fuscusquamato.

Distr. Hemisph. bor. in alpinis vel in locis frigidis.

Clavis *Taraxacorum* Japonicorum

1. Involucrum parvum sub anthesi 12–15 mm. longum 2.
Involucrum majore sub anthesi 15–21 mm. longum 8
2. Folia pinnatisecta, laciniis multijugis, sinis ad costam attingentibus, lobo terminali saepe acuminato, squamae exteriores oblongae ecorniculatae **T. yuparense.**
Folia pinnatifida vel loba, sinis ad costam non attingentibus, lobo terminali saepe obtuso raro acuto 3.
3. Involucri squamae exteriores supra medium interiorum attingentes 4.
Involucri squamae exteriores ad vel infra medium interiorum attingentes 5.
4. Involucri squamae exteriores oblongo-lanceolatae albo-marginatae **T. Miyagii.**
Involucri squamae exteriores ovato-oblongae amplae non marginatae **T. grandisquamatum.**
5. Involucri squamae exteriores oblongo-lanceolatae, corniculis obtusis praeditae 6.
Involucri squamae exteriores late ovate vel ovato-oblongae apice caudato-acuminatae parvicorniculatae 7.
6. Involucri squamae exteriores ad apicem corniculis erectis obtusis praeditae. Folia deorsum angustata. **T. sachalinense.**

- Involucrum squamae exteriores sub apice corniculis patentibus obtusis praeditae. Folia deorsum non angustata **T. Kojimae.**
7. Involucrum squamae exteriores oblongae apice eorniculatae. Folia deorsum angustata ...
..... **T. neosachalinense.**
- Involucrum squamae exteriores ovatae apice parvicorniculatae. Folia deorsum non angustata **T. Chamissonis.**
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..... **T. shimushireense.**
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- Involucrum non pruinosum, squamae exteriores late ovatae. Folia pinnatifida, lobo terminali parvo. **T. shumushuense.**
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- Involucrum epruinosum 16-17 mm. longum, squamae exteriores oblongae saepe eorniculatae non albomarginalae **T. vulcanorum.**
- Involucrum epruinosum 17-19 mm. longum, squamae exteriores ovato-oblongae saepe corniculatae distincte albo-marginatae..... **T. shikotanense.**
14. Involucrum sub anthesi 15-16 mm. longum15.
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16. Involucrum squamae exteriores ovatae vel ovato-oblongae eorniculatae, folia tantum sinuato-dentata, crassiuscula..... **T. Tatewakii.**
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Taraxacum yuparense H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 358, X (1934) p. 73, fig. 3-20, p. 75, fig. 4-11, p. 142, fig. 5-29, p. 145, fig. 7-59. Pl. I. fig. 1, 3.

T. officinale WEB. var. *lividum* KOCH subvar. *dissectissimum* KOIDZ. in Tokyo Bot. Mag. XXXI (1917) p. 142.

Radix elongata perpendicularis simplex vel parce ramosa, saepe monocephala raro bicephala, collo fusco-squamato. Folia numerosa ascendentia 9–20 cm. longa 1.5–5.5 cm. lata oblanceolato-oblonga apice acuminata raro obtusa basi in petiolum longe exalatum attenuata pinnatisecta, laciniis 6–10 jugis patentibus vel runcinatis triangulari-lanceolatis vel oblongo-lanceolatis, raro ovato-oblongis vel lanceolatis apice obtusis acutisve, basi inciso-dentatis raro subintegris, interlobiis ad costam attingentibus dentato-serratis, dentibus apice subulato-ciliatis, lobo terminali parvo hastato acuminato, raro deltoideo obtuso, utrinque plus minus pilosa. Scapi plures sub anthesi folia longiores juniores pilosi demum glabrati, sub capitulo floccosi, raro glabri. Involucrum parvum sub anthesi 12–13 mm. longum, post anthesin 12–14 mm. longum atroviride, squamae exteriores erectae ad medium interiorum attingentes, oblongae sursum angustatae, superne rosascentes, apice ecorniculatae callosae margine albo-viridescentes glabrae, interiores lineari-lanceolatae interdum contiguae connatae, apice truncatae nigrescentes. Corolla lutea 17 mm. longa, tubo 4.5 mm. longo, ligula subtus stria lata roseo-fuscescente ornata. Antherae luteae polliniferae. Achenia brunnescentia parva fusiformia 3 mm. longa 0.9 mm. lata superne spinuloso-tuberculata in cuspidem brevissimam subindistinctam 0.3–0.5 mm. longam sensim abeuntia deorsum leviter angustata minus tuberculata, rostro 5.5–7 mm. longo, pappo 5 mm. longo.

Nom. jap. *Takane-tampo* (G. KOIDZUMI 1917), *Yubari-tampo* (H. KOIDZ. 1933).

Hab. in zona alpina. **Hokkaido.** *Ishikari*: mt. Yubari (G. K.), ibidem (H. K.)—typus dupl., ibidem (J. O.), ibidem (H. H. T.), ibidem (R. KOHNO H.), ibidem (H. Y. H.), mt. Teine (H. Y. H.)—Involucrum 16 mm. longum, achenia crebrosinuloso-tuberculata. *Hidaka*: R. Shunbetsu near Futamata (M. T. n. 31295 H.).

This is a very distinct species with small achenes and dissected leaves.

Taraxacum Miyakei KITAMURA in Acta Phytotax. Geobot. IX (1942) p. 267.

Radix elongata collo fusco-squamato. Folia oblanceolata 10–16 cm. longa 2–2.8 cm. lata apice integra acuta basi sensim cuneato-angustata secus costam rubropurpurascentia breviter petiolata vel anguste alatopetiolata utrinque glabrata, margine irregulariter runcinato-dentata raro pinnatilobata. Scapi plures sub anthesi folia aequantes sparse araneo-pilosi sub capitulo dense floccosi. Involucrum latum basi rotundatum 14–15 mm. longum, squamae exteriores erecto-patentes vel erectae atrovirides apice corniculis ascendentibus 1.5–3 mm. longis praeditae glabrae margine distincte albo-marginatae, squamae interiores oblongo-lanceolatae parvicorniculatae. Corolla lutea, tubo ad faucem minute puberulo, ligula subtus fusco-striata. Stylus cum stig. fuscoviridescens. Antherae luteae polliniferae.

Nom. jap. *Notasan-tampo* (KITAMURA 1942).

Hab. **Sachalin.** Notasan W. Coast (T. MIYAKE)—typus, Outorigawa (A. HIRUTA H.).

Taraxacum grandisquamatum H. KOIDZUMI in Journ. Jap. Bot. XII (1936) p. 618.—SUGAWARA, Ill. Fl. Saghal. IV (1940) p. 1915, t. 881.

Radix elongata collo fusco-squamato. Folia oblanceolata 13–18 cm. longa 25–31 mm. lata apice acuta raro obtusa basi angustata sessilia utrinque sparse pilosa vel glabrata margine remote runcinato-dentata vel pinnatilobata dentibus vel lobis acutis, interlobiis integris. Scapi plures sub anthesi foliis longiores sparse pilosi sub capitulo denudati. Involucrum post anthesin 14–17 mm. longum, basi interdum bracteis lanceolatis involucri longioribus praeditum, squamae exteriores ovato-oblongae supra medium interiorum attingentes apice breviter acuminatae, corniculis 1–2 mm. longis praeditae minute sparseque puberulae margine sparse ciliolatae atrovirides non marginatae, squamae interiores oblongo-lanceolatae apice nigrescentes corniculatae minute sparseque puberulae. Achenia oblonga straminea corpore 4 mm. longa 1.1–1.5 mm. lata superne spinuloso-tuberculata, ceterum tuberculata apice in pyramidem 1 mm. longam basi spinulosam sensim abeuntia, rostro 12–13 mm. longo, pappo sordide albescente 11 mm. longo.

Nom. jap. *Daiho-tampopo* (H. KOIDZUMI 1936).

Hab. **Sachalin**. Secus Shiskagawa (S. S.)—typus dupl.

Taraxacum sachalinense KITAMURA in Acta Phytotax. Geobot. II (1933) p. 121. *T. trigonolobum* f. *sachalinense* H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 588.

Radix elongata, simplex vel parce ramosa, collo foliorum fragmentis nigris persistentibus subdense squamato, apice 1–oligocephalo. Folia oblanceolata 7–15 cm. longa 10–16 mm. lata apice obtusa vel acutiuscula basi in petiolum alatum attenuata margine plerumque lobato-dentata interdum tantum remote denticulata raro pinnatilobata, lobis deltoideis patentibus, lobo terminali rhomboideo parvo-mediocre, supra glabra subtus praesertim in nervo dorsali sparsim pilosa. Scapi 1–plures sub anthesi quam folia longiores vel ea aequantes primum sparse araneopilosi demum glabrescentes sed sub capitulo floccosi. Involucrum atro-viridescens sub anthesi 12–14 mm. longum basi rotundatum, post anthesin 16 mm. longum in sicco, squamae exteriores erectae ad medium interiorum attingentes, plerumque oblongae 5–6 mm. longae 2.5–3 mm. latae apice caudatae saepe corniculis 1–2 mm. longis obtusis vel acutis nec acuminatis praeditae leviter rosascentes margine ad apicem pilis brevibus ciliolatae, ceterum glabrae indistincte angustaeque albescentes, squamae interiores lineari-lanceolatae apice parvicorniculatae glabrae hyalino-marginatae. Corolla lutea marginalis 12 mm. longa, tubo 3.5 mm. longo ad faucem glabro, ligula subtus stria lata pallide fuscescente ornata. Stylus cum stigm. fuscescens.

Nom. jap. *Karafuto-tampopo* (KITAMURA 1933), *Karafuto-hime-tampopo* (H. KOIDZUMI 1934).

Hab. in montibus. **Sachalin** Fl. jun.–aug. mt. Horoto (S. S.)—typus, ibidem (K. NAGAMATSU), Chirikoro (M. T. et Y. T. H.).

Distr. Manshuria.

This species is distinguished from *T. Chamissonis* by the leaves always petiolate, not sessile and by its outer involucral scales narrower, with a erect horn at the very top, not below the top.

Taraxacum Kojimae KITAMURA in Acta Phytotax. Geobot. II (1933) p. 119.

T. trigonolobum (non DAHLST.) H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 587 pro parte.

Planta parva circ. 8 cm. alta. Radix elongata tenuiuscula simplex collo foliorum fragmentis persistentibus squamato. Folia patentia oblanceolata circ. 5 cm. longa 1 cm. lata apice obtusa basi sessilia margine pinnatiloba, lobis paucis brevibus basim versus decrescentibus reflexis acutis margine interdum denticulatis, interlobiis angustis, lobo terminali parvo brevi triangulari-rhomboideo obtuso mucronulato integro praedita, juniora sparse pilosa seniora glabrescentia. Scapus simplex sub anthesi quam folia vix longior araneopilosus praesertim sub capitulo floccosus. Involucrum sub anthesi 12 mm. longum 18 mm. latum in sicco, atroviride, squamae exteriores erectae ad medium interiorum attingentes, lanceolatae circ. 6 mm. longae 2 mm. latae apice acuminatae breviter corniculatae, corniculis patentibus, margine indistincte alboviridescens sparse ciliolatae, interiores 10 mm. longae lineari-lanceolatae apice breviter corniculatae vel ecorniculatae callosae nigro-purpurascens in sicco. Corolla lutea marginalis concolor. Stylus cum stigmatibus fuscescens. Achenium immaturum oblongum 3–3.5 mm. longum 1 mm. latum in cuspidem brevissimam abiens, rostro 2.5 mm. longo, pappo 5.5 mm. longo.

Nom. jap. *Ko-tampopo* (KITAMURA 1933).

Hab. Kuriles. Insula Paramushir, Yakedake (K. KOJIMA)—typus.

Taraxacum neo-sachalinense H. KOIDZUMI in Journ. Jap. Bot. XII (1936) p. 619.—SUGAWARA, III. Fl. Saghal. IV (1940) p. 1917, tab. 882.

Radix elongata, collo fusco-squamato. Folia oblanceolata 10–14 cm. longa 15–30 mm. lata basim versus angustata petiolata purpurascens utrinque sparse pilosa, textura tenuia, profunde pinnatifida, laciniis 5–7 jugis patentibus, ovato-lanceolatis obtusis acutisve basi denticulatis, interlobiis latiusculis ciliato-denticulatis, lobo terminali parvo rhomboideo apice obtuso. Scapi plures sub anthesi foliis longiores glabrati sub capitulo floccosi. Involucrum atroviride basi rotundatum post anthesin 18 mm. longum, squamae exteriores ad medium interiorum attingentes oblongae apice acuminatae minute parce puberulae ecorniculatae interdum parvicorniculatae margine anguste albo-marginatae glabrae, squamae interiores lanceolatae apice nigrescentes. Achenia olivaceo-straminea oblanceolato-oblonga corpore 3 mm. longa 1 mm. lata superne modeste spinuloso-tuberculata spinulis brevibus apice in pyramidem 0.7 mm. longam sensim abeuntia inferne tantum striata angustata, rostro 11.5 mm. longo, pappo sordide albescente 7 mm. longo.

Nom. jap. *Ko-iwa-tampopo* (H. KOIDZUMI 1936).

Hab. **Sachlin.** secus Shiskagawa (S. S.)—typus.

Taraxacum Chamissonis GREEN in Pittonia IV (1901) p. 208.—SHERFF in Bot. Gaz. LXX (1920) p. 342 pl. XXXII d.—KITAMURA in Acta Phytotax. Geobot. IV (1935) p. 78. Pl. II. fig. 2, 2, 3.

T. trigonolobum DAHLST. in Arkiv för Botanik 20 (1926) p. 8, fig. 5.—HULTÉN, Fl. Kamsch. IV (1930) p. 229.—HUGLUND in HULTÉN, Fl. Aleut. (1939) p. 339.

- T. crassicollum* H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 469.
T. yezoalpinum NAKAI et H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 359.
T. aleuticum TATEWAKI et KITAMURA in TATEWAKI et KOBAYASHI, Contr. Fl. Aleut. (1934) p. 89.
T. alaid-montanum H. KOIDZUMI, l. c. XI (1935) p. 467.
T. livens H. KOIDZUMI, l. c. IX (1933) p. 358.
T. Ohashitatsui KOIDZUMI in Acta Phytotax. Geobot. II (1933) p. 125.

Radix elongata crassiuscula saepe simplex ad collum saepe basibus foliorum vetustorum dense squamato. Folia minora oblanceolata 3.5–7 cm. longa 0.8–2 cm. lata apice obtusa mucronulata basi sessilia lata vel leviter angustata, margine pinnatifida, lobis deltoideis patentibus vel leviter runcinatis, lobo terminali parvo depresso-rhomboideo vel tantum dentato-serrata, serris saepe runcinatis, utrinque glabra. Scapi 1–3 sub anthesi foliis longiores parce pilosi vel glabrati, sub capitulo floccosi vel raro glabrati. Involucrum parvum atro-viride sub anthesi 12–14 mm. longum, post anthesin 15–16 mm. longum, basi rotundatum, squamae exteriores adpressae infra medium interiorum attingentes late ovatae vel ovatae apice caudatae parvi-corniculatae vel ecorniculatae rosascentes, margine anguste v. latiuscule albo-viridescens interdum parce lacerato-dentatae, parce pilosae vel glabrae, superiores saepe distincte corniculatae, squamae interiores lineari-lanceolatae parvi-corniculatae. Corollae intense flavae marginales 17–18 mm. longae, tubo 5–4 mm. longo glabro, subtus stria lata nigrescente ornatae. Stylus cum stigmatibus nigrescens. Achenia brunnea corpore 3.5 mm. longa 1 mm. lata superne spinuloso-tuberculata, interdum spinis basi dilatatis squamiformibus, deorsum leviter angustata obsolete tuberculata apice in cuspidem 0.5 mm. longam sensim abeuntia, rostro 8–9 mm. longo. Pappus sordide albescens 6 mm. longus.

Nom. jap. *Hosoba-tampopo* (G. KOIDZUMI 1933), *Kumoma-tampopo* (H. KOIDZUMI 1933), *Hutokubi-tampopo* (H. KOIDZUMI 1935), *Araitto-yama-tampopo* (H. KOIDZ. 1935).

Hab. in alpinis vel in locis frigidis. **Kuriles.** Insula Araitto, Minamiura (T. OHASHI)—typus *T. Ohashitatsui*, Insula Shumushu, Bettobinuma (J. O. et R. Y.), Insula Paramushir, Raisha (J. O. et R. Y.), Yakumoski (H. K. T.)—typus *T. crassicolli*. **Hokkaido.** *Ishikari*; mt. Daisetsu (H. KOIDZUMI), ibidem Hakuundake (G. HAYASHI H.), mt. Daisetsu (T. N. T.)—typus *T. yezoalpinum*, mt. Shiratori, Uryu (B. YOSHIMURA H.), mt. Ashibetsu (H. K. T.)—typus *T. livens*.

Distr. Kamtschatka et Insul. Aleut.

***Taraxacum shimushirense* TATEWAKI et KITAMURA** in Acta Phytotax. Geobot. III (1934) p. 105.

Planta mediocris. Radix elongata angustata monocephala ad collum foliis fragmentis nigrescentibus oblecta. Folia lanceolata vel lingulata vel obovato-oblonga 8–11 cm. longa 2.3–3 cm. lata apice obtusa subrotundatave mucronulata basi sessilia vel sensim angustata brevissime petiolata, primum pilosa demum glabrata margine grosse denticulata, dentibus depresso-triangularibus patentibus apice semper margineque interdum sparse mucronulatis vel mucronulatorepanda vel pinnatiloba, lobis triangularibus leviter reflexis margine denticulatis, lobo terminli magno rotundato-

deltoideo. Scapus plerumque simplex post anthesin foliis longior primum pilosus denique glabratus. Involucrum post anthesin 18–20 mm. longum 30–35 mm. latum in sicco, squamae exteriores infra medium interiorum attingentes, plerumque late oblongae 8–9 mm. longae 4–4.5 mm. latae, rarius lanceolatae, apice breviter caudatae corniculatae rosascentes, anguste albo-marginatae interdum denticulatae, ciliolatae, interiores lanceolatae 15–17 mm. longae albo-marginatae apice corniculatae nigrescentes. Achenia oblonga straminea corp. 4 mm. longa angulata compressa striata apice spinuloso-tuberculata in cuspidem obconicam 1 mm. longam subabrupte abeuntia, rostro 1 cm. longo, pappo sordide albo 7–8 mm. longo.

Nom. jap. *Shimushi-tampopo* (KITAMURA 1934).

Hab. **Kuriles**. Insl. Shimushir prope Nakodomari (M. T. et Y. T. H.)—typus, ibidem (M. T. et K. T. H.).

Taraxacum yatsugatakense H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 355.

Radix simplex perpendicularis v. parce ramosa, collo basibus foliorum vetustorum squamato. Folia radicalia oblanceolata 10–30 cm. longa 2–5.5 cm. lata apice rotundata deorsum gradatim angustata longe exalato-petiolata raro alato-petiolata, margine irregulariter runcinato-dentata raro pinnatifida utrinque juniora densius pilosa seniora glabrata. Scapi 1–3, sub anthesi foliis longiores sub capitulo dense floccosi. Involucrum sub anthesi 15–18 mm. longum post anthesin 17–21 mm. longum, pruinosum, nigrescens in sicco, squamae exteriores infra medium interiorum attingentes ovatae vel ovato-oblongae apice obtusae ecorniculatae margine anguste hyalinae breviter pilosae dorso glabrae, squamae interiores lanceolatae basi dilatatae late hyalino-marginatae apicem sensim angustatae ecorniculatae erosae. Corolla intense flava, marginalis 21–22 mm. longa, tubo 4.5–5.5 mm. longo glabro, ligula subtus stria lata nigrescente ornata. Antherae flavae. Stylus cum stigmatibus sulphureus. Achenia brunnea oblonga compressa corpore 3.5 mm. longa 1.2 mm. lata, supra medium muricatotuberculata infra medium sublaevia facie saepe profunde 3-sulcata, apice in pyramidem 0.7–1.5 mm. longam sensim abeuntia, rostro 11 mm. longo, pappo 7–8 mm. longo sordide albescente.

Nom. jap. *Yatsugadake-tampopo* (H. KOIDZUMI 1933).

Hab. in alpinis. **Hondo**. *Shinano*: Yatsugadake (G. K.)—loc. typi. *Suruga*: mt. Akaishi (G. K.), ibidem (Y. KUROSAWA).

Taraxacum shumushuense KITAMURA in Acta Phytotax. Geobot. II (1933) p. 124.

T. pseudo-trigonolobum H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 474, cum var. *spathulato*. Pl. I. fig. 1, 2.

T. brevisquamum H. KOIDZUMI, l. c. p. 472, cum var. *latissimisquamo*.

T. frigidopratenense H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 475.

T. latisquameo simile sed involucri majore.

Radix crassiuscula elongata oligocephala vel simplex collo squamato. Folia crassa patentia 5–20 cm. longa oblongo-lanceolata vel oblanceolata apice obtusa

mucronulata basi in petiolum brevem interdum late alatum angustata in planta culta late alata sessilia, pinnatiloba, lobis 3–5 jugis triangularibus vel deltoideis runcinatis apice acutis v. acuminatis basi irregulariter dentatis vel integris, lobo terminali parvo vel majusculo deltoideo integro, interlobiis angustis vel latiusculis subintegris vel denticulatis, utrinque seniores sparsissime pilis albis longis adpressis pilosa vel glabrescentia. Scapi plures sub anthesi foliis breviores vel ea aequantes, post anthesin elongati primum dense araneopilosi demum glabrescentes sed sub capitulo floccosi. Involucrum sub anthesi 15–16 mm. longum basi truncato-rotundatum atroviride in planta culta dilute viride, squamae exteriores longitudine interiorum $\frac{2}{3}$ attingentes, adpressae late ovatae 5–6 mm. longae 3–4.5 mm. latae apice caudatae corniculis 0.5–1 mm. longis acutis vel obtusis instructae vel eorniculatae anguste sed distincte albo-marginatae sparse pilosae in planta culta dense pilosae, extus glabrae superne rosascentes, squamae interiores lanceolatae apice roseofuscescentes parvicorniculatae vel eorniculatae parce pilosae vel glabrae. Capitula in planta culta 5.5 cm. in diametro. Corolla intense flava 18 mm. longa subtus stria lata nigrescente ornata, tubo 4.5–5 mm. longo glabro. Achenia intense brunnea oblonga angulata corpore 3.5–4 mm. longa 1.3 mm. lata apice spinulosotuberculata in cuspidem conicam 1 mm. longam subabrupte abeuntia basi sensim angustata sublaevia et tantum striata, rostro 9 mm. longo. Pappus 7 mm. longus sordide albescens.

Nom. jap. *Shumushu-tampopo* (S. KITAMURA 1933), *Sankaku-kireha-tampopo* (H. KOIDZUMI 1935), *Kireha-kanchi-tampopo* (H. KOIDZUMI 1935), *Hosoba-kanchi-tampopo* (H. KOIDZUMI 1935).

Hab. **Kuriles.** Insula Shumushu: Shiroya (T. OHASHI)—typus, ex seminibus in Kioto culta (S. K.), Kataokawan (M. T. H.), ibidem (H. KOIDZUMI **M.**)—typus *T. pseudotrigonolobi*, Kosekigawa H. KOIDZUMI n. 41953 **M.**)—typus *T. brevisquami*. Insula Paramushir: Murakamiwan (H. KOIDZUMI **M.**)—typus *T. frigidopraetensis*.

Taraxacum vulcanorum H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 331.

Radix elongata simplex perpendicularis incrassata circ. 8 mm. in diametro, collo basibus foliorum anni praecedenti dense squamato. Folia radicalia oblanceolata 4.5–9.5 cm. longa 14–20 mm. lata apice obtusa basi sensim angustata late alato-petiolata, juniora utrinque molliter albo-pilosa seniores glabrata, pinnatifida, laciniis lateralibus 4–5, saepe patentibus deltoideis raro recurvis apice mucronulatis, lobo terminali deltoideo obtuso mucronulato. Scapus simplex sub anthesi 12–13 cm. longus 4 mm. diametro, sub capitulo dense floccoso. Capitula mediocria 3.3 cm. lata in sicco. Involucrum 16–17 mm. longum 20–25 mm. latum in sicco, epruinatum, squamae exteriores ad vel supra medium interiorum attingentes erectae, plerumque oblongae 9–10 mm. longae 3 mm. latae non albo-marginatae sursum angustatae apice saepe eorniculatae raro parvi-corniculatae, extimae angustiores interdum lineares, squamae interiores lanceolatae anguste albo-marginatae apice saepe parvi-corniculatae intus leviter curvatae. Corolla flava 21 mm. longa, ligula 2 mm. lata subtus atrovirideo-striata, tubo 6 mm. longo superne piloso. Achenia immatura.

Nom. Jap. *Chachadake-tampopo* (H. KOIDZUMI 1933).

Hab. **Kuriles.** Insula Kunashir, mt. Chachanupuri (H. KOIDZUMI n. 20209, 20211 **M.**).

Taraxacum alpicola KITAMURA in Acta Phytotax. Geobot. II (1933) p. 123. Pl. II. fig. 3, 2.

T. togakushiense H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 667.

T. japonense NAKAI ex H. KOIDZUMI in Journ. Jap. Bot. X (1934) p. 308, p. 73 pro parte, fig. 3-18, p. 142, fig. 5-31, 32, p. 145, fig. 7-58.

T. ceratophorum (non DC.) KOIDZUMI in Tokyo Bot. Mag. XXXVIII (1924) p. 96 pro parte.—TAKEDA, Kozan-shokubutsu-Dui ed. I (1933) pl. 27.

T. officinale (non WEBB.) YABE in Tokyo Bot. Mag. XVIII (1904) p. (195).

T. officinale var. *lividum* (non KOCH) MAKINO in Tokyo Bot. Mag. XIX (1905) p. 29, excl. syn. omnib.

T. platycarpum var. *montanum* NAKAI? KOIDZUMI in Tokyo Bot. Mag. XXXIII (1919) p. (207).

T. kurohimense H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 363.

Radix crassiuscula elongata simplex vel oligocephala collo basibus foliorum vetustorum persistentibus instructo. Folia longe lingulata 6-30 cm., plerumque 10-20 cm. longa 3-6 cm. lata apice dilatata obtusa vel rotundata basi in petiolum late aut anguste alatum attenuata, margine tantum incisodentata, lobulis plerumque recurvatis triangularibus apice acutis vel acuminatis, basi interdum denticulatis, interlobiis latiusculis integris vel denticulatis, raro ad medium pinnatifida, laciniis deltoideis remotis obtusis, utrinque juniora sparse pilosa seniora glabrescentia. Scapi pauci saepius 1-2, sub anthesi saepe quam folia longiores raro breviores, pilis albis adpressis sparse pilosa, sub capitulo dense floccosa. Involucrum sub anthesi 15-18 mm. longum 25-30 mm. latum in sicco nigrescens pruinose, squamae exteriores erectae ad vel supra medium interiorum attingentes, lanceolatooblongae, oblongae, vel ovato-oblongae 7-9 mm. longae 2-3 mm. latae apicem versus sensim angustatae raro caudato-acuminatae apice interdum purpureo-corolatae saepe ecor-niculatae raro parvicorniculatae margine indistincte albomarginatae breviter ciliolatae vel subglabrae dorso glabrae, squamae interiores lineari-lanceolatae infra apicem saepe ecor-niculatae, raro parvicorniculatae glabrae purpurascens hyalinomarginatae. Capitula circ. 4 cm. lata. Corolla intense flava marginalis 22-25 mm. longa circ. 2 mm. lata extus stria lata nigrescente notata, tubo 5 mm. longo sparse piloso. Stylus cum stigmatibus nigrescens. Achenia oblongo-linearum plus minus compressa pallide straminea, corpore 3.5-4 mm. longa 1 mm. lata apice in cuspidem $\frac{1}{3}$ -1 mm. longam abeuntia superne tantum spinuloso-tuberculata basim versus sublaevia, facie 3-sulcata, rostro 8-9 mm. longo. Pappus sordide albescens 7 mm. longus.

Nom. jap. *Miyama-tampopo* (MAKINO 1905), *Tateyama-tampopo* (KITAMURA 1933).

Hab. in alpinis siccioribus. **Hondo.** Fl. jul.-aug. *Kaga*: mt. Hakusan (G. K.), ibidem (Z. T.), ibidem (H. SAKURAI M.). *Yetchu*: mt. Tateyama, inter mt. Jodo et Zaratoge (S. K.)—typus, mt. Tateyama (Z. T.), Onidake (T. O.), mt. Shirouma, Shozudake (J. O.), Asahidake (S. KOTO)—parva 6.8 cm. alta. folia sessilia, capitula, minora, involucrum 14 mm. longum, squamae exteriores oblongo-lanceolatae, Asahidake Iburikogen (S. YOSHIZAWA)—Caulis 5-10 cm. altus, folia petiolata, involucrum 13 mm. longum, squamae exteriores anguste oblongo-lanceolatae. *Shinano*: mt. Shirouma (Y. YABE T.)—typus Miyamatampopoi, ibidem (G. K.),

ibidem (H. K.), ibidem (Masumi MATSUNO), Shakushidake (J. O.), Yarigadake (G. K.), mt. Togakushi (Shintaro TAKAHASHI). *Yechigo*: mt. Myoko (S. M.).

The type specimen of *T. japonense* NAKAI in the Herbarium of the University of Tokyo was collected at Kamikochi, prov. *Shinano* in July 1927. The specimen has only radical leaves and no head.

var. **shiroumense** (H. KOIDZUMI) KITAMURA in Jap. Journ. Bot. XIII (1948) p. 491.
T. shiroumense H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 362.

Folia saepe profunde pinnatifida, laciniis acuminatis, lobo terminali acuto vel breviter acuminato. Involucrum albopruinosum, squamae exteriores oblongae apice semper corniculatae. Corolla intense flava, tubo sparsissime piloso.

Nom. jap. *Shirouma-tampopo*. (H. KOIDZUMI 1933).

Hab. **Hondo**. *Suruga*: ex mt. Arakawa culta in Kioto (S. KITAMURA)—typus, mt. Arakawa (Y. KUROSAWA), mt. Akaishi (Y. K.). *Shinano*: mt. Shirouma (H. K.).

The writer cultivated this species in the Botanical Garden of the Kyoto University. The involucre of the cultivated individuals are always pruinous.

Taraxacum nairoense H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 593.

Radix perpendicularis saepe ramosa, multicephala, collo saepe subnudo. Folia radicalia valde variabilia 12–33 cm. longa 3.5–8 cm. lata, sub anthesi minora post anthesin majora, oblanceolata apice saepe acuta interdum cuspidata rarius obtusa basim versus sensim angustata saepe anguste petiolata utrinque juniora molliter pilosa seniora glabrata, margine varie dissecta, pinnatifida vel profunde pinnatifida, laciniis 7–9 jugis, ovato-lanceolatis vel deltoideis leviter recurvis vel patentibus apice acutis, interlobiis latis vel angustis, inciso-dentatis. Scapi plures sub anthesi quam folia breviores, post anthesin quam folia longiores, circ. 5 mm. in diametro, sub capitulo dense floccoso. Capitula circ. 4 cm. lata in sicco. Involucrum sub anthesi 17–19 mm. longum, pruinosa post anthesin 22–25 mm. longum, squamae exteriores sub anthesi supra medium interiorum aequantes, ovato-oblongae 9–10 mm. longae 4–5 mm. latae apice distincte corniculatae anguste hyalino-marginatae, patentes demum reflexae, squamae interiores lineari-lanceolatae sub apice distincte corniculatae. Corolla flava 21 mm. longa, tubo 5–6 mm. longo, ligula 2 mm. lata subtus late atrovirideostriata. Styli rami flavescentes. Achenia brunnea, corpore oblonga 3.5 mm. longa 1.1–1.2 mm. lata basi sensim angustata, longitudinaliter profunde trisulcata et multicostulata, superne tuberculato-spinulosa, in cuspidem 1.6–1.8 mm. longam sensim abeuntia, rostro 11 mm. longo. Pappus 7 mm. longus sordide albus.

Nom. jap. *Nairo-tampopo* (H. KOIDZUMI 1934).

Hab. **Sachalin**. Nairo (S. SUGAWARA M. H. K. n. 72872)—typus, Nairo secus Kamishiska road (S. K.), in Kyoto culta (S. K.).

Taraxacum shikotanense KITAMURA in Acta Phytotax. Geobot. II (mar. 1933) p. 126. Pl. II. fig. 3, 1.

T. yezoense H. KOIDZUMI in Kyo-zai-koza Vol. VI no. 9 (1930) p. 14 nomen nudum, in Journ. Jap. Bot. IX (oct. 1933) p. 360.

T. tokachiense var. *ecorniculatum* H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 560.

Abs *T. platycrano* involucri squamis exterioribus longioribus, superioribus interioribusque distincte corniculatis distinguendum.

Herba magna. Radix crassiuscula elongata oligocephala vel monocephala, collo interdum crasso, saepe basibus foliorum fragmentis persistentibus sub dense squamato. Folia erecto-patentia vel patentia oblanceolata 15–30 cm. longa 2.5–6 cm. lata apice fere obtusa raro acuta basi longe in petiolum anguste v. late alatum attenuata interdum sessilia, profunde pinnatifida vel pinnatiloba, lobis circ. 5–jugis anguste v. late triangularibus runcinatis obtusis raro acutis antice dentatis, interlobiis angustis vel latis denticulatis, lobo terminali saepe magno deltoideo apice saepe obtuso raro acuto mucronulato, integro, juniora sparse pilosa seniora glabrescentia. Scapi plures v. numerosi, sub anthesi quam folia longiores vel ea aequantes, sparse araneo-pilosi praesertim sub capitulo dense floccosi. Capitula magna circ. 5 cm. lata sat radiata et polyantha. Involucrum latum basi rotundato-truncatum atro-viride sub anthesi 17–20 mm. longum post anthesin 20–27 mm. longum, squamae exteriores erectae supra medium interiorum attingentes oblongae v. ovato-oblongae apicem sensim angustatae vel caudatae 8–13 mm. longae 3.5–6 mm. latae inferiores parvicorniculatae, superiores semper distincte corniculis 1–1.5 mm. longis praeditae, superne nigropurpurascens margine sparse puberulae distincte albo-marginatae, interiores linearilanceolatae apice sparse pilosae vel glabrae corniculatae nigro-purpurascens. Corolla intense lutea marginalis 21–25 cm. longa 3–3.5 mm. lata, tubo 5 mm. longo apice sparse piloso, ligula subtus stria pallide nigrescente ornata. Achenia brunnea oblonga corpore 4–5 mm. longa 1.3–1.6 mm. lata apice in cuspidem conicam 1 mm. longam subabrupte abeuntia superne spinuloso-tuberculata basim versus angustata et minus tuberculata, rostrum 11–13 mm. longum. Pappus sordide albescens 7–9.5 mm. longus.

Nom. jap. *Shikotan-tampopo* (KITAMURA 1933) vel *Nemurotampopo* (H. KOIDZUMI 1933) vel *Chishima-tampopo* (H. KOIDZ. 1933).

Hab. in littoribus maritimis. **Kuriles.** Insula Shikotan, Shakotanzaki (J. O.)—typus, Inemoshiri (M. T. H.), Matsugahama (M. T. H.), Shakotanzaki (M. T. H.), Insula Yetrofu, Shibetro (Y. T. et K. M. H.), Insula Urup, Tokotan (M. T. H.), Insula Ketoi, prope Ishikuzurehama (M. T. et K. T. H.), Insula Ushishir, Minamijima (M. T. et Y. T. H.), Kitajima (M. T. et Y. T. H.), Insula Rashiwa, Mikasa (M. T. et Y. T. H.), Nakadomari (M. T. et Y. T. H.). Insula Ekaruma (M. T. H.). **Hokkaido.** Fl. jun.–aug. *Nemuro*: Kanebo-bokujo (M. T. H.), Kombuusu (M. T. H.), Kombumori (M. T. H.), Noshappu (M. T. H.), Tomoshiri (M. T. H.), prope Nemuro (J. O.), Tomoshiri (H. H. T.), Nemuro (H. K. T.). *Kushiro*: Otanoshike (M. T. H.), Akkeshi (M. T. H.). *Iburi*: Adzuma (K. MIYABE H.), Shiraoi (M. T. H.), Noboribetsu (M. T. H.), Muroran (M. T. H.), ibidem (D. HOSHI). *Kitami*: lac Saruma (S. S.). *Tokachi*: Atsunai (H. YOKOYAMA M.)—typus *T. tokachiense* var. *ecorniculati*.

Taraxacum pseudolasianthum H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 592.—SUGAWARA, III. Fl. Saghal. IV (1940) p. 1905, t. 876. Pl. II. fig. 2, 4.

Radix elongata collo basibus foliorum vetustorum densissime squamato, 1-pluricephala. Folia exteriora patentia, interiora ascendentia linearilanceolata 10–25 cm. longa 1.5–4 cm. lata apice obtusa mucronulata basi sensim angustata breviter petio-

lata vel alato-petiolata intense viridia basi viridia nec purpurascentia, semper crassiuscula (v. v. s.) utrinque glabrata, exteriora margine subtintegra saepe remote sinuato-dentata, interiora inciso-dentata raro pinnatilobata. Scapi plures sub anthesi foliis longiores superne plus minus purpurascentes sparsim pilosi sub involucri floccosi. Capitula sub anthesi erecta post anthesin pendula in fructu erecta. Involucrum sub anthesi 15–16 mm. longum basi rotundatum post anthesin 17–18 mm. longum, atroviride, squamae exteriores ad medium interiorum attingentes erectae vel erecto-patentes nec patentes vel reflexae, oblongae raro inferiores lanceolatae apice obtusae, corniculis parvis ascendentibus instructae vel eorniculatae breviter acuminatae, interdum purpurascentes margine glabrae albo-viridescens, squamae interiores oblongo-lanceolatae apice purpurascentes parvicorniculatae vel eorniculatae glabrae. Corolla intense flava apice tantum aurantiaca 19–21 mm. longa, tubo 5–5.5 mm. longo ad faucem parce piloso, ligula 3 mm. lata subtus estriata. Stylus cum stigmatibus sulphureus. Antherae. flavae polliniferae. Achenia anguste oblonga fusco-brunnea, corpore 5.5 mm. longa 1.6 mm. lata multisulcata, superne spinuloso-tuberculata, spinulis validis interdum leviter recurvis in cuspidem 0.7–1 mm. longam spinulosam latam abeuntia inferne leviter angustata striata obsolete tuberculata, rostro 8–10 mm. longo, pappo 8 mm. longo.

Nom. Jap. *Ishiyama-tampopo* (H. KOIDZUMI 1934).

Hab. **Sachalin**. Ishiyama prope Shiritori (S. K.)—loc. typi.

The writer observed this species in its type locality. This is a distinct species. The heads are pendulous after their anthesis. The leaves are thick and sinuate dentate on their margine.

Taraxacum Tatewakii KITAMURA in Acta Phytotax. Geobot. XI (1942) p. 266. Pl. II. fig. 2, 5.

Radix elongata parce ramosa fusco-corticata, collo basibus foliorum vetustorum densissime squamato 1-pluricephala. Folia radicalia extima minora spathulata longe petiolata, exteriora interioraque oblanceolata vel oblanceolato-spathulata, textura crassiuscula, sparsim pilosa demum glabrata, 4.5–12 cm. longa 1–2 cm. lata apice rotundata basi sensim angustata petiolata vel alato-petiolata margine tantum sinuato-dentata interdum integra vel tantum mucronulata, raro interiora pinnati-lobata. Scapi 1-plures sub anthesi foliis longiores sparse pilosi sub capitulo floccosi. Involucrum latum basi rotundatum atroviride sub anthesi 15–26 mm. longum, post anthesin 17–18 mm. longum, squamae exteriores ad medium interiorum attingentes ovatae vel ovato-oblongae apice breviter acuminatae eorniculatae raro parvi-coniculatae purpureo-corolatae margine gradatim albo-hyalinae plerumque integrae interdum mucronulatae vel denticulatae glabrae vel apice tantum breviter et sparsim puberulae, squamae interiores saepe paucae latae (i. e. saepe contiguae connatae), oblongo-lanceolatae apice nigrescentes erosae eorniculatae. Corolla flava 28–20 mm. longa, tubo 5 mm. longo ad faucem glabro, ligula 3–3.5 mm. longa, subtus stria lata nigrescente ornata. Stylus cum stigmatibus flavo-viridescens. Achenia fusco-brunnea oblonga corpore 4.5 mm. longa 1 mm. lata multistriata superne muricato-tuberculata,

apice in cuspidem 0.5–0.6 mm. longam abeuntia basi parum angustata truncata, rostro 7–8 mm. longo, pappo albo 7–8 mm. longo.

Nom. jap. *Atsuba-tampopo* (KITAMURA 1942).

Hab. **Sachlin**. Shiska, Ishibaiyama (B. YOSHIMURA)—typus, Perengai (M. T. et Y. TAKAHASHI H.), Naruko (M. T. et Y. T. H.), Atsunai (M. T. et Y. T. H.), Okadayama (S. S.).

Taraxacum Yamamotoi KOIDZUMI in Acta Phytotax. Geobot. II (1933) p. 127.

T. alaid-litorale H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 467.

T. frigidulum H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 465 cum var. *parvisquamo* var. *subrotundato* et var. *glabrisquamo*.

T. multisulcatum H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 476.

T. gradifolium H. KOIDZUMI, l. c. p. 472.

T. megalanthum H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 471.

Radix elongata apice ramosa, collo vix squamato. Folia oblanceolata 5–17 cm. longa 1.6–3.2 cm. lata apice obtusa mucronulata basi sensim in petiolum anguste alatum angustata, interdum late alata sessilia tantum lingulata parce mucronulato-dentata saepe inciso-dentata interdum superne pinnatifida, lobis lateralibus 3–4 jugis runcinatis triangularibus obtusis, lobo terminali parvo depresso-deltoideo vel rhomboideo, utrinque glabrata. Scapi plures sub anthesi foliis breviores vel longiores sparse pilosi vel glabri sub involucri floccosi vel interdum glabrati. Involucrum semper olivaceo-atroviride, basi truncato-rotundatum, sub anthesi 15–18 mm. longum, squamae exteriores adpressae ad medium interiorum attingentes oblongo-lanceolatae interdum ovato-lanceolatae raro ovatae ad apicem corniculatae, corniculis patentibus aut ascendentibus interdum eorniculatae, parce pilosae margine angustissime albo-viridescens glabrae interdum parce laceratae, squamae interiores lineari-lanceolatae apice nigro-purpurascens eorniculatae vel corniculatae. Corolla intense flava marginalis 21 mm longa, subtus estriata vel striata, tubo 5.5 mm. longo glabro. Achenia straminea, corpore 3.5–4 mm. longa 1.1–1.3 mm. lata apice tantum spinuloso-tuberculata in cuspidem 0.9 mm. longam subabrupte abeuntia, ceterum striata glabra, rostro 7–8 mm. longo, pappo 7 mm. longo sordide albescente.

Nom. jap. *Maruba-tampopo* (G. KOIDZUMI 1933), *Kanchi-tampopo* (H. KOIDZ. 1935), *Ohba-tampopo* (H. KOIDZ. 1935), *Araido-hama-tampopo* (H. KOIDZ. 1935), *Seitaka-kanchi-tampopo* (H. KOIDZ. 1935), *Ohbana-tampopo* (H. KOIDZ. 1935).

Hab. **Kuriles**. Insula Paramushir, Chioki (K. KOJIMA)—typus, Involucrum squamae exteriores oblongo-lanceolatae parvicorniculatae v. eorniculatae, Atakeshi (H. KOIDZUMI M.)—typus *T. megalanthi* (H. KOIDZUMI M.), Raisha (J. O. et R. Y.), Murakamiwan (J. O. et R. Y.). Insula Alide—typus *T. alaid-litoralis*, Minamiura (J. O. et R. Y.), ibidem (H. KOIDZUMI M.)—typus *T. multisulcati*, Atakeshi (H. KOIDZ. M.). Insula Shumushu, Shiomigawa (J. O. et R. Y.), Bettobi (J. O. et R. Y.), Kagenoma (M. T. H.), Murakamizaki (H. KOIDZ. M.).

This species is characterized by its leaves usually ligulate and sparingly dentate, and by its involucri scales black green and not broadly white margined. *T. megalanthum* is an unusually well grown form.

Taraxacum ketoense TATEWAKI et KITAMURA in Acta Phytotax. Geobot. III (1934) p. 106.

Proximum *T. shikotanensi* a quo involucri squamis exterioribus parum brevioribus ellipticis abrupte breviter caudatis distinguendum.

Radix elongata crassiuscula monocephala collo vix squamato. Folia pauca ascendentia lingulata 17–19 cm. longa 3–4 cm. lata apice acuta vel obtusa basi in petiolum elongatum sensim angustata, utrinque glabrata, pinnatifida, lobis deltoideis vel elongato-triangularibus leviter runcinatis apice acutis acuminatisve mucronulatis margine mucronulato-denticulatis vel subintegris, interlobiis angustis, lobo terminali deltoidei mediocri. Scapi numerosi sub anthesi quam folia 2 plo longiores glabrati. Capitula erecta magna 4–4.5 cm. lata in sicco. Involucrum 18–22 mm. longum 3–4 cm. latum in sicco nigrescens, squamae exteriores ad medium interiorum attingentes plerumque late ellipticae 9–10 mm. longae 5–6 mm. latae apice fere abrupte breviter caudatae semper corniculis parvis instructae margine interdum irregulariter minute dentatae, fere angustissime albo-marginatae saepe rosascentes glabratae, interiores oblongo-lanceolatae 16–19 mm. longae apice parvicorniculatae interdum ciliolatae. Corolla flava circ. 18 mm. longa, tubo 4 mm. longo glabro, ligula subtus estriata. Achenia brunnea oblonga corpore 4 mm. longa compressiuscula valde 4-angulata apice spinuloso-tuberculata in cuspidem 1–1.5 mm. longam subabrupte abeuntia basim versus leviter angustata tantum striata non tuberculata, rostro 11 mm. longo. Pappus sordide albus 9 mm. longus.

Nom. jap. *Ketoi-tampo* (KITAMURA 1934).

Hab. **Kuriles**. Insula Ketoi, Kombuzaki (M. T. et K. T. H.)—typus, ibidem Nishiura (S. ITAGAKI H.).

Tarxacum platycedidum DIELS in FEDDE, Rep. Sp. Nov. Beih. XII (1922) p. 515. —DAHLST. in Acta Horti Götth. II (1926) p. 146, Fig. 1. Tafel I, 1–3. Pl. II, fig. 2, 1; Pl. IV, fig. 6, 1; Pl. VI, fig. 11, 1.

Tarxacum Otagirianum KOIDZUMI in Acta Phytotax. Geobot. II (1933) p. 127.

T. albo-marginatum KITAMURA in Acta Phytotax. Geobot. IV (1935) p. 103.

T. officinale var. *lividum* (non KOCH) MIYABE et MIYAKE, Fl. Saghal. (1915) p. 285 pro major parte.

T. saxatile H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 594.—SUGAWARA, Ill. Fl. Saghal. IV (1940) p. 1909, t. 878.

T. pruinatum H. KOIDZUMI, l. c. p. 596.—SUGAWARA, l. c. p. 1911, t. 878.

T. multisectum KITAGAWA in Rep. Inst. Sci. Res. Manch. II (1938) p. 311, fig. 6.

T. sachalinense H. KOIDZUMI, l. c. p. 597 non KITAMURA.

T. Koidzumii NEMOTO, Fl. Jap. Suppl. (1936) p. 826.—SUGAWARA, l. c. p. 1913, t. 880.

T. Sugawarae H. KOIDZUMI, l. c. p. 588.—SUGAWARA, l. c. p. 1901, t. 874.

T. imbricatum H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 358.

Planta mediocris vel magna, radix elongata nigrocorticata apice 1-pluricephala, collo modeste fusco-squamato. Folia erecto-patentia vel ascendentia oblanceolata vel oblanceolato-oblonga 12–42 cm. longa 2.2–7 cm. lata, textura tenuia, olivaceo-viridia demum sparce pilosa, apice obtusa vel apiculata basi sensim angustata petiolata purpurascens, margine pinnatifida, laciniis patentibus 5–8 jugis ovato-lanceolatis acutis vel obtusis antice inciso-dentatis, interlobiis saepe angustis interdum latius-

culis, saepe integris raro denticulatis, lobo terminali saepe majusculi deltoideo vel depresso-rhomboideo raro parvo. Scapi plures sub anthesi folia aequantes vel longiores modeste pilosi sub capitulo floccosi. Involucrum sub anthesi basi rotundatum pruinatum, 17–18 mm. longum, post anthesin 17–20 mm. longum, squamae exteriores ad medium interiorum attingentes praecipue pruinatum (v. v. s.) adpressae, oblongae, ovato-oblongae vel ovatae apice acuminatae dorso secus costam atrovirides ceterum virides distincte albo-marginatae apice tantum purpurascens breviter pilosae saepe leviter incurvatae ecorniculatae raro parvicorniculatae, squamae interiores oblongo-lanceolatae atrovirides inferne hyalino-marginatae apice nigrescentes ecorniculatae. Corolla intense flava marginalis 15–17 mm. longa, tubo 4.5–5 mm. longo ad faucem glabro, ligula 2.2 mm. lata, subtus stria lata nigrescente ornata. Stylus cum stigmatibus nigrescens. Antherae flavae polliniferae. Achenia brunnea corpore 3.5 mm. longa 1 mm. lata multisulcata, superne dense muricato-tuberculata apice spinulis longiusculis erecto-patentibus muricata in pyramidem 1 mm. longam sensim abeuntia basi leviter angustata minus tuberculata, rostro 10–11.5 mm. longo. Pappus sordide albus 8–9 mm. longus.

Nom. jap. *Odasamu-tampopo* (G. KOIDZUMI 1933), *Shimofuri-tampopo* (H. KOIDZ. 1934), *Karafuto-tampopo* (H. KOIDZ. 1934), *Karafuto-iwatampopo* (H. KOIDZ. 1934).

Hab. **Sachalin.** Fl. jun.–aug. Odasamu (Shintaro OTAGIRI)—typus *T. Otagiriani*, Chirai (S. S.), Shian prope Ochiai (S. S.)—typus dupl. *T. pruinosi*, ibidem (S. K.), mt. Mimizuku (H. TOBITA), Tomarioro (S. S.), Minabetsu (T. MIYAKE H.), Chipisani, Aniwa Bay (T. MIYAKE H.), Kashiho (T. MIYAKE H.), ibidem (S. K.)—loc. typi *T. saxatilis*, ibidem (R. KOHNO H.), mt. Tosso (N. HIRATSUKA H.), Shise-ekka (T. MIYAKE H.), Tokukeshi (T. MIYAKE H.), Toobutsu (T. MIYAKE H.), Maguntanhama (S. K.), loc. typi *T. sachalinensis Koidzumii*, Hoe (S. S. H. Kyoto. M.)—typus *T. Sugawarae*. **Hokkaido.** in alpinis. *Shiribeshi*: mt. Yezofuji (S. S.)—loc. typi *T. imbricati*. **Korea.** Fl. mai.–jun. *Kanhoku*: Kyonson (J. O.), Ranan (T. S.). *Kannan*: Hokumen, Kosho. (N. N.), Kosorei (N. N.). *Kogen*: mt. Kongo (J. O.).

Distr. China, *Hopei*, *Shansi*, *Kansu*, *Manshuria*.

***Taraxacum chirieanum* KITAMURA** in Acta Phytotax. Geobot. XI (1942) p. 267. Pl. I, fig. 1, 1.

Radix elongata, collo modeste fusco-squamato. Folia oblanceolata magna 15–40 cm. longa 2–3 cm. lata apice acutiuscula mucronulata basi sensim angustata petiolata margine irregulariter dentata, dentibus apice acutis utrinque primum pilosa demum glabrata. Scapi plures sub anthesi foliis longiores sub capitulo floccosi. Involucrum latum basi rotundatum, post anthesin 18–20 mm. longum atroviride, squamae exteriores adpressae ad medium interiorum attingentes oblongae raro oblongo-lanceolatae margine distincte albo-marginatae integrae raro denticulatae glabrae apice contractae, corniculis magnis patentibus 2.5–4 mm. longis praeditae, squamae interiores oblongo-lanceolatae apice truncatae sub apice distincte corniculatae. Achenia brunnea oblonga corpore 4.5 mm. longa 1.3–1.4 mm. lata superne modeste spinuloso-tuberculata et squamoso-tuberculata versum basim leviter angustata minus tuberculata, apice in cuspidem 0.5–1 mm. longam sensim abeuntia, rostro 12 mm. longo, pappo sordide albescente 8–10 mm. longo.

Nom. jap. *Chirie-tampopo* (KITAMURA 1942).

Hab. **Sachalin**. Fl. jul. Shiskagun, Chirie (Y. HOSHINO, S. OKADA et S. SUGIYAMA)—typus, ibidem (S. S.).

Abs *T. Hultenii* involucri squamis exterioribus oblongis nec ovatis foliis tantum denticulatis, acheniis breviter spinulosis distinguendum.

Taraxacum perlatescens DAHLST. in Arkiv för Bot. 20 (1926) p. 13, fig. 8.—HULTÉN, Fl. Kamt. IV (1930) p. 224.

T. longe-petiolatum H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 475.

T. Kudoanum TATEWAKI et KITAMURA in Acta Phytotax. Geobot. III (1934) p. 104.—H. KOIDZ. in Journ. Jap. Bot. XI (1935) p. 462 cum var. *subreflexo*, l. c. var. *denticulato-marginato*, l. c. p. 464, var. *nudicollo*, l. c. p. 464 et var. *angustisquamato*, l. c. p. 464.

T. squamatissimum H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 470.

T. latisqueameum (non DAHLST.) TATEWAKI in Trans. Sapp. Nat. Hist. Soc. IX (1927) p. 191.

Radix elongata crassiuscula collo basibus foliorum vetustorum fuscis oblecto. Folia crassa oblanceolato-oblonga 10–21 cm. longa 2–7 mm. lata, raro ad 30 cm. longa apice obtusa vel acutiuscula basi in petiolum anguste alatum vel exalatum brevem angustata saepe roseo-purpurascens, utrinque pilosiuscula vel glabrata, profunde pinnatifida, laciniis 3–4 jugis triangularibus interdum angustioribus, runcinatis vel patentibus antice saepe dentatis, interlobiis angustis aut latiusculis dentatis v. integris, lobo terminali magno deltoideo vel deltoideo-hastato integro vel inferne parce dentato. Scapi plures sub anthesi folia aequantes, vel leviter superantes vel breviores, primum pilosi demum glabrescentes, sub involucrio semper dense araneo-floccosi. Capitula magna sub anthesi 5–5.5 cm. lata. Involucrium sub anthesi 17–19 mm. longum olivaceo-viride basi rotundatum, post anthesin 21–25 mm. longum, squamae exteriores erecto-patentes ad medium interiorum attingentes ovatae vel ovato-oblongae 5–6.5 mm. latae 8–11 mm. longae superne rosascentes apice breviter caudatae nigrescentes, corniculis saepe magnis ad 2 mm. altis obtusis praeditae vel parvicorniculatae, margine interdum denticulatae plus minus puberulae vel glabratae, late albo-marginatae dorso viridescens, squamae interiores lineari-lanceolatae apice nigro-purpurascens sub apice saepe corniculatae glabrae. Corolla intense flava, marginalis 22–27 mm. longa, tubo 6.5–8 mm. longo ad faucem sparsim puberulo, ligula subtus stria lata nigrescente ornata. Antherae polliniferae. Stylus cum stigmatibus fuscens. Achenia straminea vel brunnescentia angusta, corpore 4–4.5 mm. longa 1.1 mm. lata superne acute et longe spinuloso-tuberculata apice in cuspidem 1 mm. longam abeuntia, basim versus obsolete tuberculata, rostro 7–12 mm. longo. Pappus 9 mm. longus albescens.

Nom. jap. *Araito-tampopo* (TATEWAKI 1927), *Kitachishima-tampopo* (H. KOIDZUMI 1935), *Enaga-tampopo* (H. KOIDZUMI 1935), *Kefutokubi-tampopo* (H. KOIDZUMI 1935).

Hab. **Kuriles**. Fl. jul.-aug. Insula Paramushir, Murakamiwan in pratis (Y. K. H.)—typus *T. Kudoi*, inter Nishikawa et Atenkeshi (Y. K. H.), Raisha (J. O. et R. Y.), Ruisan (M. T.), Sandosan (J. O. et R. Y.), Arakawa (J. O. et R. Y.), Jakumoski (K. KOJIMA), ibidem (H. KOIDZUMI M.)—typus *T. squamatissimi*. Insula Shumushu, Tenjinyama (J. O. et R. Y.), Bettobu (J. O. et R. Y.), ibidem (M. T. H.), Kagenoma (M. T. H.), inter Bettobunuma et

Bettobugyojo (J. O.). Insula Araid, Sakichizaki (H. Ito et G. Komori H.), mt. Araid (H. KOIDZUMI M.)—typus *T. longe-petiolati*.

Distr. Kamtschatka.

The writer cultivated this species raised from seeds collected at Insl. Shimushu. This species has very thick leaves like those of *Spinacia oleracea*. The corolla is full yellow slightly reddish at the apex. In the cultivated individuals, the outer involucre scales are green and not distinctly white-margined. This species is easily distinguished from *T. hon-doense* by its thick leaves, and distinctly horned outer involucre scales. The shape of the leaves is usually constant in this species.

Subsect. 2 Mongolica

Subsect. **Mongolica** DAHLST. in Acta Horti Göth. II (1926) p. 159.

Subsect. *Ceratophora* HAND-MZ., Monogr. *Tarax.* (1907) p. 58 pro parte.

Achenia straminea vel brunnescentia superne spinuloso-tuberculata apice in pyramidem brevem sensim abeuntia. Corollae luteae, alboflavescentes vel albae. Involucrum viride aut dilute viride, squamae exteriores adpressae interdum patentes, ovatae-lineares apicem versus leviter rosascentes eorniculatae vel distincte corniculatae. Caulis ad collum parce squamatus.

Distr. Asiae-orientalis in pratis vel in montibus.

Clavis *Taraxacorum* Japonicorum

1. Involucrum foliaque dilute viridia, corolla alba raro flavescent 2.
Involucrum foliaque viridia, corolla flava..... 3.
2. Scapi sub anthesi quam folia longiores. Involucri squamae exteriores ovato-oblongae apice distincte corniculatae **T. albidum.**
Scapi sub anthesi quam folia breviores vel ea aequantes. Involucri squamae exteriores ovatae apice parvicorniculatae **T. shinanense.**
3. Involucrum parvum sub anthesi 13-14 mm. longum 4.
Involucrum majore sub anthesi 15-20 mm. longum..... 7.
4. Involucri squamae exteriores infra medium interiorum attingentes oblongo-lanceolatae vel ovato-lanceolatae parvicorniculatae vel eorniculatae **T. japonicum.**
Involucri squamae exteriores ad vel supra medium interiorum attingentes..... 5.
5. Involucri squamae exteriores supra medium interiorum attingentes, ovatae vel ovato-oblongae, corniculatae vel eorniculatae. **T. variabile.**
Involucri squamae exteriores ad medium interiorum attingentes..... 6.
6. Involucri squamae exteriores ovato-oblongae parvicorniculatae **T. kiushianum.**
Involucri squamae exteriores oblongae eorniculatae **T. kusakaiense.**
7. Involucri squamae exteriores infra medium interiorum attingentes late ovatae apice obtusae. Folia pectinato-pinnatifida **T. pectinatum.**
Involucri squamae exteriores ad vel supra medium interiorum attingentes..... 8.
8. Involucri squamae exteriores supra medium interiorum attingentes..... 9.
Involucri squamae exteriores ad medium interiorum attingentes 11.
9. Involucri squamae exteriores dorso secus costam nigrescentes, ovato-lanceolatae, apice eorniculatae vel parvicorniculatae, achenia 5 mm. longa 1 mm. lata **T. Maruyamanum.**
Involucri squamae exteriores virides apice corniculatae. 10.
10. Involucri squamae exteriores oblongae apice modeste corniculatae **T. sendaicum.**
Involucri squamae exteriores oblongo-lanceolatae apice longe corniculatae, achenia 3-4 mm. longa 1.2-1.4 mm. lata **T. longeappendiculatum.**

11. Involucri squamae exteriores sub anthesi patentes oblongo-lanceolatae vel oblongae parvicorniculatae **T. yetrofuense.**
Involucri squamae exteriores sub anthesi adpressae.....12.
12. Involucri squamae exteriores oblongae vel lanceolatae13.
Involucri squamae exteriores ovatae vel ovato-oblongae14.
13. Involucri squamae exteriores apice parvicorniculatae vel ecorniculatae **T. elatum.**
Involucri squamae exteriores distincte corniculatae **T. ceratolepis.**
14. Involucri squamae exteriores virides ovato-oblongae raro ovatae saepe distincte corniculatae **T. platycarpum.**
Involucri squamae exteriores ecorniculatae raro parvicorniculatae..... 15.
15. Involucri squamae exteriores virides ovatae vel late ovatae **T. hondoense.**
Involucri squamae exteriores hyalino-membranaceae superne rosascentes, ovatae vel ovato-oblongae **T. Arakii.**

Taraxacum albidum DAHLST. in Acta Horti Berg. IV (1907) p. 11, fig. 2, tab. 1, fig. 9-15, in FEDDE, Rep. 1909 p. 136.—OSAWA in Archiv. Zellf. bd. X (1913) p. 456.—YASUI in Tokyo Bot. Mag. XXVII (1913) p. (493).—MAKINO, Ill. Fl. Nipp. (1940) p. fig. 24.—H. KOIDZUMI in Journ. Jap. Bot. X (1934) p. 72, fig. 18, p. 144, fig. 6-11, 25, p. 145, fig. 7-16, p. 146, fig. 8-27, p. 305, XII (1936) p. 629 cum var. *genuino* f. *fimbriato*.

T. mongolicum HAND.-MAZT., Monogr. *Tarax.* (1907) p. 67 pro parte.

T. albiflorum (MAKINO) KOIDZUMI in Tokyo Bot. Mag. XXXVIII (1924) p. 94.

T. Hideoi NAKAI ex H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 351, X (1934) p. 146, fig. 8-32. Pl. VII. fig. 12, 5.

T. officinale var. *albiflorum* MAKINO in List Seeds Bot. Gard. Imp. Univ. Tokyo 1895 p. 20.—MIYAKE in Beih. Bot. Centr. XVI (1904) p. 403, t. 21, fig. 4.—MATSUM., Index Pl. Jap. II (1912) p. 668.

Radix simplex elongata collo vix squamato 1-pluricephalo. Folia radicalia exteriora patentia, interiora ascendentia dilute viridia saepe interlobiis atropurpureo-maculatis, petiolis albescentibus, oblanceolato-linearibus, 15-20 cm. longa 3-7 cm. lata in petiolum anguste alatum basi dilatatum attenuata, utrinque primum araneosa demum glabrata, pinnatifida, laciniis 5-6 jugis runcinatis vel patentibus oblongo-triangularibus vel deltoideis, remotiusculis apice obtusis vel acutis inferne saepe incisis, interlobiis irregulariter dentatis, lobo terminali parvo vel mediocre deltoideo vel hastato-deltoideo apice obtuso integro. Scapi plures sub anthesi quam folia longiores vel ea aequantes, dilute virides leviter purpurascentes plus minus araneo-floccosi demum glabrati, sub involucri floccosi. Capitula circ. 4 cm. diametro sat radiata et polyantha. Involucrium dilute viride sub anthesi 16-19 mm. longum apice circ. 20 mm. latum (v. v. s.), squamae exteriores ad vel supra medium interiorum attingentes superne patento-reflexae vel erectae, inferiores interdum lineari-lanceolatae saepe ovato-oblongae vel ovatae, superiores ovato-oblongae margine indistincte anguste hyalinae, interdum denticulatae sparse araneo-pilosae, supra medium anguste distincte rosascentes apice acuminatae sub apice corniculis saepe majusculis triangularibus nigrorosascentibus ad 2.5 mm. altis praeditae, interdum parvicorniculatae vel ecorniculatae, squamae interiores lineari-lanceolatae apice erosae nigro-rosascentes sub apice parvicorniculatae vel ecorniculatae. Corolla alba marginalis 24-25 mm.

longa 3 mm. lata, tubo 8–9 mm. longo ad faucem sparse piloso, ligula intus medio leviter lutescens extus stria lata canescente et saepe apicem versus leviter rosascente ornata. Stylus cum stigmatibus pallide luteoviridescens. Antherae ochraceo-luteae, polline pallide luteo repletae. Achenia oblonga brunnea, corpore 4 mm. longa 1.6 mm. lata facie profunde 3 sulcata usque ad basim dense tuberculata basi contracta, supra $\frac{2}{3}$ breviter spinuloso-tuberculata apice in pyramidem 1.2–1.5 mm. longam abeuntia, rostro 8–10 mm. longo, pappo sordide albescente 7–10 mm. longo.

Nom. jap. *Shirobana-tampopo*.

Hab. in pratis secus vias. **Hondo**. Fl. apr.–mai. *Musashi*: Tokyo, Koishikawa Bot. Gard. (S. K.)—loc. typi, Hitotsubashi (S. M.), Dokanyama (S. M.). *Kai*: Kofu (H. K. T.). *Sagami*: Kamakura (Y. M. T.). *Totomi*: Ahikusa (G. H.). *Mino*: Hiyoshi (K. SHIWOTA), Minamikuisse (M. HAMA). *Ohmi*: Nishisho (G. K.), Kawanishi (Ch. H.), Hayama (Ch. H.). *Tamba*: Karasudake (Y. A.). *Yamashiro*: Kioto, Bot. Gard. Kyoto Imp. Univ. (S. K.), Higatani (K. HORIE M.). *Kii*: Misu (N. N. T.). *Iwami*: Hamada (I. MARUYAMA), Yunotsu (S. TAKAKI M.). *Tango*: Taikoyama (K. TAKEUCHI). *Inaba*: Tottori (N. K.). *Idzumo*: Tobisu (R. KISHINO). *Nagato*: Hagi (G. K.), Misumi (J. N. n. 898 T.). *Bitchu*: Arato (K. Y.), Rajomon (K. YOKOMIZO), Niimi (H. K. T.)—typus *T. Hideoi* ibidem (R. NISHIHARA T.). Ishigasato (R. NISHIHARA). *Bingo*: Samba (J. KUME). **Shikoku**. *Iyo*: Kuno (T. IMAIDZUMI), Dogo (S. K.), Tambara (I. YOGO). *Tosa*: Kochi (T. YOSHINAGA), Sagawa (T. YOSHINAGA). **Kiushiu**. *Chikuzen*: Hakata (T. SUGINO), Akiduki (G. K.). *Chikugo*: Ohki (G. K.). *Hiuga*: mt. Awoidake (G. K.). *Hidzen*: Nagasaki (U. F.). *Higo*: Kudama (Y. D.), Kumamoto (H. K. T.), Ubuyama (O. SHIGA). *Satsuma*: ins. Koshiki (Z. T.), Nagayoshi (Y. D.), Kushikino (K. KIBA). *Ohsumi*: Ohahira (T. SHIGEMASA). *Insula Iki* (Z. T.), Gonoura (K. OHKI T.).

f. sulfureum (H. KOIDZUMI) KITAMURA in Jap. Journ. Bot. XIII (1948) p. 495.

T. albidum var. *sulfureum* H. KOIDZUMI in Journ. Jap. Bot. X (1935) p. 308, l. c. XII (1936) p. 629 et var. *igaense* H. KOIDZUMI, l. c. XII (1936) p. 629.

Flores sulphurei.

Hab. **Kiushiu**. *Chikugo*: Ohkimura (G. K.). **Hondo**. *Suwo*: Ohuchi (J. N. n. 547 T.). *Tajima*: Idzushi, Higashitokonooyama (Y. A.).

Taraxacum shinanense H. KOIDZUMI in Tokyo Bot. Mag. LXVII (1933) p. 89 cum var. *genuino*, l. c. p. 91, var. *ecorniculato*, l. c. p. 92, var. *latifolio*, l. c. p. 92, var. *sagittato-hastato*, l. c. p. 92, in Journ. Jap. Bot. X (1934) p. 144, fig. 6–12, 30, p. 145, fig. 7–26, p. 146, fig. 8–17, 31, l. c. XII (1936) p. 712 cum f. *latifolio* et f. *sagittato-hastato*. Pl. VII. fig. 12, 8.

T. denudatum H. KOIDZUMI in Tokyo Bot. Mag. LXVII (1933) p. 94.

T. shinanense var. *denudatum* H. KOIDZUMI in Journ. Jap. Bot. XII (1936) p. 713.

T. nambuense H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 363.

T. shinanense var. *nambuense* H. KOIDZUMI in Journ. Jap. Bot. XII (1936) p. 713.

Radix elongata crassiuscula, collo parce squamato, 1–pluricephala. Folia oblanceolata 17–25 cm. longa 1.5–5.5 cm. lata apice obtusa basi breviter petiolata vel late alata, utrinque sparse pilosa demum glabrata, raro tantum irregulariter dentata, plerumque pinnatilobata vel fida, laciniis deltoideis vel oblongo-lanceolatis runcinatis 4–6 jugis acutis vel obtusis, margine integris vel parce dentatis, interlobiis saepe angustis, lobo terminali mediocri vel parvo, deltoideo vel depresso-rhomboideo. Scapi

plures sub anthesi foliis breviores vel parum longiores, sparse araneosi sub capitulo floccosi. Involucrum dilute viride sub anthesi 15–17 mm. longum basi rotundatum, squamae exteriores ad vel infra medium interiorum attingentes ovato-oblongae vel ovatae apice acuminatae ecorniculatae vel corniculatae margine saepe rosascentes, densiuscule pilosae, squamae interiores ovato-lanceolatae vel oblongo-lanceolatae apice roseo-fuscescentes ecorniculatae. Corolla alba vel leviter flavescens, marginalis 16–18 mm. longa, tubo 4.5–5 mm. longo ad faucem densiuscule puberulo, ligula subtus stria lata fuscescente ornata. Stylus cum stigmatibus fuscescens. Antherae flavae poliniferae. Achenia olivaceobrunnea vel straminea oblonga, corpore 4–4.5 mm. longa 1.2–1.5 mm. lata facie 2 sulcata superne spinuloso-tuberculata inferne tuberculata deorsum angustata apice in cuspidem 0.7–1.5 mm. longam subabrupte abeuntia, rostro 8.5–10 mm. longo, pappo sordide albescente 8–9 mm. longo.

Nom. jap. *Usugi-tampopo* (H. KOIDZUMI 1933), *Oku-usugi-tampopo* (H. KOIDZUMI 1933), *Nambu-shirotampopo* (H. KOIDZUMI 1933).

Hab. **Hondo.** Fl. mai. in pratis vel secus vias. *Mutsu*: Nesori (Y. F.). *Rikuchu*: Morioka (Y. F.)—loc. typi *T. nambuensis*, Madaki (G. T.), Nakano (Y. F.), Shinjo (H. I.), Midusawa (S. K.), ibidem (H. I.), Iwayado (H. I.). *Rikuzen*: Sendai (S. K.), ibidem (S. O.). *Uzen*: Yamagata (Y. Y.), Higashisawa (Y. Y.), Tamugino (Y. Y.), Wada (G. K.), Niishuku (G. K.). *Iwaki*: Nakamura, Iwanoko (Ch. ONODA T.)—typus dupl. *T. denudati*, Haramachi (H. K. T.), Koseki (N. IMAI), Chikatsu (S. SUZUKI T.), Taira (H. K.), Isobe (M. HAYASHI). *Hitachi*: Nantaizan (H. TSURUMACHI). *Shinano*: mt. Hijiri (H. K. T.).

Taraxacum japonicum KOIDZUMI in Tokyo Bot. Mag. XXXVIII (1924) p. 96 pro parte quoad pl. kiotoenses.—H. KOIDZUMI in Journ. Jap. Bot. X (1934) p. 71, fig. 1–4, l. c. p. 310, l. c. XII (1936) p. 818 cum var. *genuino*, var. *ecorniculato* et var. *kansaiensi*. Pl. V. fig. 9, 2; Pl. VII. fig. 12, 3.

T. bitchuense H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 352!

T. liukiense H. KOIDZUMI, l. c. p. 350!

T. okinawaense H. KOIDZUMI, l. c. XII (1936) p. 627 cum var. *ecorniculato*.

T. kansaiense KOIDZUMI in Acta Phytotax. Geobot. II (1933) p. 125.

Radix elongata subgracilis, collo vix squamato, saepe apice pluricephalo. Folia radicalia sub anthesi patentia vel ascendentia oblanceolatolinearia 15–30 cm. longa 3–5 cm. lata basi gradatim angustata exalato-petiolata, petiolo interdum rubescente basi dilatato, runcinato-pinnatifida, laciniis lateralibus 5–6 jugis triangularibus apice obtusis acutisve inferne dentatis interlobiis angustis, lobo terminali submagno deltoideo raro rhomboideo apice obtuso, primum sparse pilosa demum glabrata, textura debilia. Scapi plures-numerosi sub anthesi quam folia breviores vel ea aequantes, primum brunneo-floccosi demum sub capitulo tantum dense floccosi, ceterum denudati. Capitula minora circ. 3 cm. diametro, flosculis paucis. Involucrum sub anthesi 13 mm. longum post anthesin 16–19 mm. longum, squamae exteriores adpressae longitudine $\frac{1}{3}$ – $\frac{2}{5}$ interiorum attingentes oblongo-lanceolatae vel ovato-oblongae 4–5 mm. longae 1.5–2 mm. latae apice attenuatae saepe rosascentes sub apice parvi-corniculatae vel ecorniculatae, margine obsolete hyalinae supra medium breviter villosae dorso anguste nigrocostatae, squamae interiores lineari-lanceolatae hyalino-

marginatae apice obtusae nigrescentes sub apice ecorniculatae vel parvicorniculatae. Corolla lutea marginalis 15–16 mm. longa 2–2.5 mm. lata, tubo 4–4.5 mm. longo, ad faucem densiuscule puberulo, ligula subtus stria lata ornata. Stylus cum stigm. nigrescens. Antherae luteae polliniferae. Achenia straminea oblonga corpore 3.5–4 mm. longa 1.5 mm. lata, facie 2-sulcata $\frac{1}{3}$ superne spinuloso-tuberculata, spinulis fere erectis, ceterum tuberculata basim versus laevia leviter contracta apice in pyramidem 0.5–0.8 mm. longam robustam sensim abeuntia, rostro 6–8 mm. longo. Pappus 6–7.5 mm. longus, sordide albescens.

Nom. jap. *Kansai-tampopo* (G. KOIDZUMI 1924, spharmate *Kansei-tampopo*), *Bitchu-tampopo* (H. KOIDZUMI 1933), *Liukiu-tampopo* (H. KOIDZUMI 1933), *Okinawa-tampopo* (H. KOIDZUMI 1936), *Kishiu-tampopo* (G. KOIDZUMI 1933).

Hab. in pratis vel secus vias. **Hondo.** *Yamashiro*: Kioto Shirakawaguchi (G. K.)—typus, mt. Hie (S. K.), Kurodani (N. K.), Oinosaka (Y. A.), Mukomachi (H. Y. T.). *Ohmi*: Katata (S. K.), Otsu (Ch. H.), Suzukatoge (S. K.), Sakamoto (Ch. H.). *Tamba*: Ayabe (H. K. T.), Myokosan (Y. A.), Sakiyama (S. HOSOMI M.), Fukuchiyama (Y. A.), Oeyama (Y. A.). *Kii*: Gobo (T. SHIBAGUCHI), Hosokawa (Y. NUMAJIRI T.), Wakayama (N. K.), Yura (G. K.)—typus *T. kansaiensis*. *Settsu*: Okamachi (N. UI T.), Shindojo (Z. T.), Mita (I. OYAMADA). *Kawachi*: Osaka (Z. Y.). *Yamato*: mt. Yoshino (H. K. T.). *Awaji*: Tomishima (K. MINAKUCHI). *Harima*: Matsuisho (Z. T.). *Bitchu*: Ohshima (Z. T.), Takahashi (Y. Z. M.)—typus *T. bitchuensis*, Nariwa (I. YOGO), Ochiai (Z. Y.), Nochi (Z. T.). *Bizen*: Kabushima (Z. T.), Okayama (S. Sato). *Inaba*: Tottori (Z. T.). *Aki*: Hiroshima (S. K.). *Bingo*: Samba (T. KUME). **Shikoku.** *Awa*: Tomidaura (G. K.), Kamomyo (J. N. M.). *Iyo*: Saijo (H. YAMAMOTO), Tokudamura (I. YOGO). *Tosa*: Ogawa (T. YOSHINAGA), Sagawa (T. YOSHINAGA). **Kiushiu.** *Chikuzen*: Hakata (T. SUGINO), Imazu (K. NAKAJIMA). *Chikugo*: Fukuoka (G. K.), ibidem (H. K. T.). *Hizen*: Hirato (Izumi SENDAI). **Liukiu.** Insula Okinawa, Shuri (D. HOSHI)—typus dupl. *T. okinawaensis*. Insula Kume (M. n. 15122)—typus *T. liukiuensis*.

This is a distinct species with small heads and little outer involucre scales usually tainted with rose colour.

***Taraxacum variabile* KITAMURA** in Acta Phytotax. Geobot. III (1934) p. 106.

T. platycarpum var. *variabile* (KITAM.) H. KOIDZ. in Tokyo Bot. Mag. I (1936) p. 147. Pl. VI. fig. 10, 2.

Planta parva. Radix elongata mono vel oligocephala, collo foliorum fragmentis persistentibus parce squamato. Folia terrae adpressa lanceolato-lingulata, longissima 10 cm. plerumque 7–8 cm. longa 1.5–2 cm. lata utrinque ad costam densiuscule ceterum sparse pilosa, supra viridia subtus pallida saepe utrinque rubescentia apice obtusa basi sensim in petiolum late vel anguste alatum abeuntia, pinnatifida laciniis 5–6 jugis approximatis ovato-oblongis valde reflexis apice acutis obtusisve margine integris interdum dentatis vel denticulatis, lobo terminali mediocri plerumque deltoideo margine integro. Scapi 1–2, sub anthesi quam folia breviores vel ea aequantes densiuscule pilosi. Capitula parva 3–3.5 cm. lata. Involucreum parvum florendi tempore 12–14 mm. longum 17–20 mm. latum in sicco, squamae exteriores supra medium interiorum attingentes erectae ovato-oblongae 8–10 mm. longae 3–4.5 mm. rarissime 1.5 mm. latae apice sensim acutae vel acuminatae ecorniculatae, interdum caudato-acuminatae sub apice corniculis magnis instructae rosascentes, margine ciliolatae, squamae interiores circ. 10 mm. longae lineari-lanceolatae hyalino-

marginatae parvicorniculatae nigrescentes. Corolla flava marginalis 17–20 mm. longa, tubo 6 mm. longo apice piloso, ligula subtus stria lata nigrescente ornata. Stylus cum stigmatibus nigrescens. Achenia oblonga straminea corpore 3–3.5 mm. longa 1 mm. lata angulata sulcato-striata apice muricato-tuberculata in cuspidem 1 mm. longam sensim abeuntia basi gradatim angustata, rostro 5.5 mm. longo. Pappus sordide albescens 4.5 mm. longus.

Nom. jap. *Kitsune-tampopo* (KITAMURA 1934), *Miyama-kwanto-tampopo* (H. KOIDZ. 1936).

Hab. in montibus. Fl. mai. **Hondo.** *Sagami*: Ashigarashimogun, Myojindake ad summam (H. YAMAMOTO)—typus.

Taraxacum kiushianum H. KOIDZUMI in Tokyo Bot. Mag. XLVII (1933) p. 100. Pl. IV. fig. 7, 3.

T. japonicum var. *macrolepis* H. KOIDZUMI in Journ. Jap. Bot. XII (1936) p. 819.

T. Imaizumii H. KOIDZUMI in Journ. Jap. Bot. XII (1936) p. 652.

T. shikokianum KITAMURA in Acta Phytotax Geobot. II (1933) p. 121.

Radix elongata simplex, collo vix squamato. Folia patentia vel ascendentia oblanceolato-lineariter 10–25 cm. longa 1.6–5 cm. lata basi sensim angustata exalato vel anguste alato-petiolata juniora utrinque pilosa seniora glabrata, pinnatifida vel partita, laciniis 4–5 jugis runcinato-triangularibus apice obtusis mucronulatis saepe integris raro denticulatis, interlobiis angustis vel latiusculis interdum paucilobatis, lobo apicali deltoideo apice obtuso raro late subcaudato. Scapi plures sub anthesi quam folia breviores vel parum longiores, sub capitulo floccosi. Involucrum sub anthesi 13.5–14 mm. longum, post anthesin 17–19 mm. longum, squamae exteriores ovato-oblongae 7–7.5 mm. longae 4 mm. latae ad medium interiorum attingentes, apice attenuatae sub apice parvicorniculatae margine saepe superne leviter purpurascens, ceterum indistincte hyalinae plus minus villosae raro laceratae, interiores oblongo-lanceolatae apice obtusae nigro-purpurascens sub apice eorniculatae, interdum corniculatae, margine hyalinae. Corolla flava marginalis 14.5–15.5 mm. longa 2 mm. lata subtus stria lata ornata, tubo 3.5–3.7 mm. longo plus minus puberulo. Stylus fuscovirescens. Antherae flavae polliniferae. Achenia brunnea obovato-oblonga corpore 3.5–4 mm. longo 1–1.3 mm. lato, facie saepe 2-sulcato, superne spinuloso-tuberculata in pyramidem 0.5 mm. longam sensim vel subabrupte abeuntia, infra medium tantum obsolete tuberculata gradatim leviter angustata, rostro 7–9 mm. longo. Pappus sordide albescens 6.5–7.5 mm. longus.

Nom. jap. *Tsukushi-tampopo* (H. KOIDZUMI 1933), *Shikoku-tampopo* (S. KITAM. 1933), *Shikoku-miyama-tampopo* (H. KOIDZUMI 1936), *Daiho-kansei-tampopo* (H. KOIDZUMI 1936).

Hab. in montibus. **Kiushiu.** *Buzen*: Tsutami, Kwaraguchi (T. YAMAZAKI)—typus dupl. *T. kiushiani*. *Bungo*: Minamiyamada (Z. T.), ibidem, Machida (K. IKEBE M.), Mori (K. IKEBE). *Chikuzen*: Fukuchisan (S. HATSUSHIMA). *Chikugo*: Kasahara (Y. NABESHIMA M.). *Hizen*: Fukuyejima (S. TOYAMA). **Shikoku.** *Iyo*: Onogahara (T. IMAIZUMI)—typus dupl. *T. Imaizumii*, Mado (I. YOGO), Uwajima (T. IMAIZUMI), prope Matsuyama (M. OGATA), Shenzokuyamamura, mt. Yokomine (I. YOGO)—typus *T. shikokiani*.

This species is characterized by its small heads and oblong-ovate scales, usually slightly purple at the top.

Taraxacum kuzakaiense KITAMURA in Acta Phytotax. Geobot. XI (1942) p. 269. Pl. VI. fig. 10, 1.

Radix elongata apice 1-pluricephala, collo vix squamato. Folia radicalia demum sparse pilosa anguste lineari-oblongeolata 5–11 cm. longa 0.7–2 cm. lata apice obtusa vel acuta basi alato-petiolata subregulariter pinnatipartita, laciniis subaequalibus 5–6 jugis runcinatis ovato-oblongis acutis interlobiis integris vel parce mucronulatis, lobo terminali triangulari vel triangulari-hastato parvo. Scapi plures sub anthesi foliis breviores vel ea aequantes dense araneo-pilosi sub capitulo floccosi. Involucrum parvum sub anthesi basi rotundatum, 14–15 mm. longum, demum 16–17 mm. longum, squamae exteriores ad medium interiorum attingentes adpressae oblongae apice acuminatae plerumque ecorniculatae raro corniculatae superne ad marginem subdense pilosae concolores interdum margine vel apice purpurascentes, squamae interiores lanceolatae apice ecorniculatae glabrae. Corolla flava marginalis 16–16.5 mm. longa, tubo 4.5 mm. longo ad faucem glabro, ligula 2 mm. lata concolore. Stylus cum stigmatibus flavo-viridescens. Achenia brunnea parva anguste oblonga corpore 3 mm. longa 1 mm. lata superne spinuloso-tuberculata basi leviter angustata striata apice in cuspidem 0.8 mm. longam sensim abeuntia, rostro 9 mm. longo. Pappus sordide albescens 6.5 mm. longus.

Nom. jap. *Kuzakai-tampo* (KITAMURA 1942).

Hab. **Hondo**. Fl. mai.–jun *Rikuchu*: Kadomamura, Kuzakai (Y. FUKUDA), Yanagawa (S. YUKINOURA).

Taraxacum pectinatum KITAMURA in Acta Phytotax. Geobot. II (1933) p. 119.—H. KOIDZUMI in Journ. Jap. Bot. XII (1936) p. 820, cum var. *Ikoma*. Pl. V. fig. 8, 1. *T. Nemotoi* H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 355. *T. Numajirii* H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 364.

Radix crassa elongata, collo vix squamato. Folia numerosa lineari-oblongeolata ascendentia vel patentia 10–30 cm. longa 3–4 cm. lata basi in petiolum exalatum 5–7 mm. longum attenuata, omnia subconformia sed exteriora minora, profunde pectinato-pinnatifida, laciniis anguste linearibus inaequilongis 8–18 jugis approximatis patentibus vel interdum leviter reflexis apice obtusis acutisve margine integris rarius remote denticulatis, interlobiis angustis dentatis vel lobulis angustis parvis patentibus plerumque singulis praeditis, lobo terminali parvo hastato-deltaideo apice obtuso mucronulato instructa, utrinque sparse pilosa ad costam densiuscula, petiolo ad medium angusto basi dilatato. Scapi plures—numerosi sub anthesi foliis breviores vel ea aequantes sparse araneopilosi, sub capitulo densissime floccosi. Involucrum sub anthesi 15–19 mm. longum post anthesin 21 mm. longum 20–25 mm. latum in sicco, squamae exteriores adpressae, longitudine interiorum $\frac{1}{4}$ – $\frac{2}{5}$ attingentes apice plerumque obtusae, infra apicem corniculis $\frac{1}{2}$ mm. longis et latis obtusis instructae vel rarius ecorniculatae callosae margine pilis albis longis tenuis dense villosae, obscule late albo-marginatae, inferiores ovatae, ovato-oblongae vel late ovatae 5–6 mm. longae 2.5–3 mm. latae, superiores ovato-oblongae circ. 6 mm. longae 2 mm. latae, squamae interiores lineari-lanceolatae distincte hyalino-marginatae basi dilatatae, sub

apice parvicorniculatae vel callosae nigrescentes glabrae. Capitula 35–40 mm. diametro. Corolla pulchre lutea marginalis 18–21 mm. longa 2.5 mm. lata, tubo 5 mm. longo apice pilis unicellulatis instructo, ligula subtus stria lata nigrescente ornata. Antherae luteae. Stylus cum stigmatibus fuscescens. Achenium stramineum vel brunnescentis oblongum 4.5 mm. longum 1.3 mm. latum apice in pyramidem $\frac{1}{2}$ mm. longam sensim abiens superne spinuloso-tuberculatum, ceterum plus minus tuberculatum, basim versus sensim contractum, rostro 5–7 mm. longo. Pappus sordide albescens 7–8 mm. longus.

Nom. jap. *Kushiba-tampop* (KITAMURA 1933), *Ketampopo* (H. KOIDZUMI 1933), *Koya-tampopo* (H. KOIDZUMI 1933).

Hab. in montibus. **Hondo.** *Bitchu*: Atetsugun, Nochimura, Onobe (Z. T.)—typus, Arato (K. YAMAGUCHI). *Idzumo*: Ino (M. HAYASHI). *Tango*: mt. Aoba (Y. A.), Oeyama (Y. A.), Karasugadake (Y. A.), Ashiu (S. O.). *Yamashiro*: Atagoyama (S. K.). *Kii*: Yawatamura (S. O.). *Ise*: Hirakurayma (K. YAGAMI), Takihara (M. MAGOFUKU T.). *Yetchu*: Yabutamura (T. O.). **Shikoku.** *Tosa*: Higashitoyonaga (T. YOSHINAGA).

Abs *T. kiushiano* involucri majore, squamis exterioribus brevioribus ovatis vel late ovatis apice fere obtusis viridescentibus margine dense villosis, foliis plerumque pectinato-pinnaifidis distinguendum.

Taraxacum Maruyamanum KITAMURA in Acta Phytotax. Geobot. VI (1937) p. 20. Pl. VI. fig. 10, 3.

Radix crassa simplex, collo vix squamato. Folia numerosa oblanceolata 18–28 cm. longa 3–4.5 cm. lata basi longe in petiolum saepe exalatum 4–8 cm. longum attenuata, saepe ad medium interdum profunde pinnatifida, laciniis circ. 7 jugis ovato-triangularibus approximatis interdum remotis saepe leviter reflexis apice obtusis margine denticulatis, interlobiis obtusis saepe angustis interdum latiusculis grosse dentatis, lobo terminali parvo vel mediocri depressorhombeo vel deltoideo apice mucronulato obtuso, utrinque glabrata textura tenuia, petiolis ad medium angustis basi dilatatis. Scapi numerosi quam folia longiores vel ea aequantes glabrati sed sub capitulo floccosi denique elongati. Capitula 3.5–4 cm. diametro. Involucrum sub anthesi 16–18 mm. longum 25–35 mm. latum in sicco, in fructu elongatum 20–22 mm. longum, squamae exteriores biseriales adpressae supra medium interiorum attingentes ovato-oblongae 10–11 mm. longae 4–4.5 mm. latae apice acuminatae nigrescentes subecorniculatae vel parvicorniculatae margine ciliolatae vel glabrae dorso secus costam semper nigrescentes, ceterum pallide viridescentes, squamae interiores oblongo-lanceolatae vel lanceolatae 13–14 mm. longae late hyalinomarginatae vel omnes viridescentes apice nigrescentes callosae parvicorniculatae vel ecorniculatae glabrae. Corolla flava marginalis 20–23 mm. longa 1.5–2 mm. lata apice truncata dorso late nigrostriata, tubo 6.5–7.5 mm. longo apice parce piloso. Antherae flavae. Stylus cum stigm. nigrescens. Achenia brunnescentia anguste oblonga corpore 5 mm. longa 1.1 mm. lata apice in cuspidem conicam 1.5 mm. longam sensim abeuntia basi leviter angustata truncata, facie longitudinaliter profunde bisulcata superne spinuloso-tuberculata inferne tuberculata, rostro 7–9 mm. longo. Pappus sordide albescens 7 mm. longus.

Nom. jap. *Oki-tampopo* (KITAMURA 1937).

Hab. **Hondo**. Fl. mai. Oki: Chibu (I. MARUYAMA)—typus, Kuroki, Mita (KIMURA).

Taraxacum longeappendiculatum NAKAI in Tokyo Bot. Mag. XL (1926) 576.
—H. KOIDZUMI in Journ. Jap. Bot. X (1934) p. 71, fig. 1-16, p. 142, fig. 5-57, p. 145, fig. 7-10, 19, 20, p. 312, l. c. XII (1936) p. 717 cum var. *genuino*, var. *Nakaii*, var. *macrolepide* et f. *laciniatocurvo*, in Tokyo Bot. Mag. XLVIII (1934) p. 682 cum var. *genuino*, var. *micrantho*, var. *glabrisquamato* et var. *minore*. Pl. V, fig. 9, 1; Pl. VI, 11, 4.

T. tokaiense KITAMURA in Acta Phytotax. Geobot. II (1933) p. 122.

T. micranthum KITAMURA, l. c. p. 183

T. longe-appendiculatum var. *tokaiense* KITAMURA, l. c. III (1934) p. 108.

T. Nakaii H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 354.

T. denticorne var. *apiculatum* H. KOIDZUMI et var. *grandisquamatum* H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 675.

T. candidum H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 563.

Radix elongata simplex, collo vix squamato 1-oligocephalo. Folia oblanceolato-lineararia numerosa 10-30 cm. longa 1.8-6 cm. lata basi in petiolum plerumque exalatum interdum alatum attenuata interdum subintegra dentata, plerumque pinnatifida vel lobata, lobis triangularibus saepe patentibus interdum runcinatis remotis vel approximatis apice obtusis acutisve basi inciso-dentatis, interlobiis incisis vel denticulatis, lobo apicali parvo depresso-rhomboideo vel deltoideo apice obtuso raro acuto integro vel sparse denticulato praedita, utrinque primum sparse pilosa demum glabrescentia. Scapi plures sub anthesi quam folia breviores vel ea aequantes sparse pilosi sub capitulo dense floccosi. Involucrum sub anthesi 14-16 mm. longum post anthesin 17-19 mm. longum, squamae exteriores sub anthesi erectae vel patentes longitudine $\frac{3}{4}$ - $\frac{4}{5}$ interiorum attingentes, oblongae vel oblongo-lanceolatae 7-12 mm. longae 1.5-4.5 mm. latae apice caudatae sub apice corniculis magnis 1.5-3 raro 6 mm. longis saepe ascendentibus acutis vel obtusis instructae, margine supra medium sparse crispato-pilosae interdum apice rosascentes, indistincte hyalino-marginatae, squamae interiores lanceolatae margine hyalino-membranaceae apice minute ciliolatae vel glabrae interdum rosascentes sub apice distincte corniculatae, corniculis magnis saepe acutis. Corolla flava marginalis 13-20 mm. longa 2-2.5 mm. lata, tubo 5-6 mm. longo ad faucem piloso, extus stria lata nigrescente notata. Stylus cum stigm. nigrescens. Achenia brunneo-straminea oblonga corpore 3-4 mm. longa 1.2-1.4 mm. lata supra $\frac{2}{3}$ spinuloso-tuberculata, spinulis ascendentibus validis apice in cuspidem 1 mm. longam sensim abeuntia, facie 2-sulcata, medio tuberculata inferne laevia. Rostrum 8-11 mm. longum. Pappus 6-8 mm. longus sordide albescens.

Nom. jap. *Hiroha-tampopo* (NAKAI 1926), *Tokai-tampopo* (S. KITAM. 1933), *Jingu-tampopo* (KITAM. 1933), *Boso-tampopo* (H. KOIDZUMI 1933), *Shiraga-tampopo* (H. KOIDZUMI 1935), *Hakone-tampopo* (H. KOIDZUMI 1934), *Kireha-hakone-tampopo* (H. KOIDZUMI 1934).

Hab. in pratis vel secus vias prope maris. **Hondo**. *Kii*: Shiwonomisaki (T. H.). *Ise*: Ariyoshi (H. ASAI), Ujiyamada (H. H.)—loc. typi *T. candidi*, Sotokuratoyama (T. MAGOFUKU), Kitahama (Y. A.), mt. Asama (S. K.), Ujiyamada, Kusedo (T. M.), Yamato (T. M.). *Shima*: near Toba Station (Y. A.). *Mino*: Hidamura (K. SHIWOTA), Kawai (M. HAMA), Tajimi (K. SHIWOTA), Kaisai (M. HORI), Akiyomura (K. SHIWOTA). *Mikawa*: Nishiura (K. SHIWOTA),

mt. Hongu (S. K.), Horaiji (Z. T.). *Totomi*: Hamamatsu (Z. T.)—typus *T. tokaiensis*, Suruga: Setonoya (Y. KUROSAWA), Suyama (J. S.), Gotenba (S. K.). *Idzu*: ex Atami in Koishikawa culta (T. N.)—typus, mt. Amagi (Y. SUZUKI), Toga (M. T. H.), Ito (M. T. H.), Shiroishi (M. T.), Shimoda (M. T.). *Sagami*: Sengokuhara (H. Y.), Miyagino (H. Y.). *Awa*: Toji (S. ASANO), Tahara (S. ASANO), Kominato (J. SUGIMOTO), mt. Kiyozumi ad pedem (T. N. T.). *Nagato*: Katsuyama, Ichinomiya (Z. T.), ibidem (K. MURATA).

f. **albo-flavescens** KITAMURA in Jap. Journ. Bot. XIII (1948) p. 496.

Flores albo-flavescentes.

Hab. **Hondo**. *Mino*: Toki (K. SHIWOTA).

The specimens from *Nagato* coincide well with those of *T. longe-appendiculatum* of Tokaido.

Taraxacum yetrofuense KITAMURA in Acta Phytotax. Geobot. II (sept. 1933) p. 184.

T. giganteum H. KOIDZUMI in Journ. Jap. Bot. IX (oct. 1933) p. 362, l. c. X (1934) p. 142 fig. 5-1, p. 144 fig. 6-3.

? *T. vegetum* H. KOIDZUMI in Journ. Jap. Bot. IX (oct. 1933) p. 361, l. c. X (1934) p. 73, fig. 3-1-2, p. 75, fig. 4-7, p. 144, fig. 6-8.

? *T. longifolium* H. KOIDZUMI in Journ. Jap. Bot. IX (oct. 1933) p. 361, l. c. X (1934) p. 146, fig. 8-10.

Radix simplex crassa elongata, collo vix squamato. Folia numerosa oblanceolata ampla patentia 10-25 cm. longa 3-6 cm. lata apice acuta vel obtusa basi sensim in petiolum anguste alatum attenuata utrinque sparse pilosa profunde pinnatifida, interdum pinnatipartita, laciniis oblongo-lanceolatis 4-6 jugis acutis valde reflexis vel patentibus basi grosse dentatis apice integris, interlobiis angustis irregulariter denticulatis, lobo terminali parvo hastato-triangulari, deltoideo vel rhomboideo apice obtuso margine integro raro parce denticulato. Sacpi plures sub anthesi foliis longiores vel aequantes sparse pilosi sub capitulo floccosi. Involucrum viride basi rotundatum sub anthesi 17 mm. longum, post anthesin 20-22 mm. longum, squamae exteriores plerumque ad medium interdum supra medium interiorum attingentes erectae vel patentees oblongo-lanceolatae, vel lanceolatae sub apice distincte corniculatae margine puberulae indistincte albo-marginatae, interiores lineari-lanceolatae sub apice corniculatae glabrae nigropurpurascens. Corolla flava marginalis 18-23 mm. longa, tubo 4.5-5 mm. longo ad faucem puberulo, ligula subtus stria lata roseo-fuscescente ornata. Antherae luteae. Stylus cum stigmatibus nigrescens. Achenium stramineum corpore 3.5 mm. longum 1 mm. latum superne spinuloso-tuberculatum basim versum minus tuberculatum apice in cuspidem 1-1.2 mm. longam abiens, rostro 10-13 mm. longo. Pappus sordide albescens 8 mm. longus.

Nom. jap. *Yetrofu-tampopo* (KITAMURA sept. 1933), *Oh-tampopo* (H. KOIDZUMI oct. 1933). Hab. **Kuriles**. Insula Yetrofu, Kamuikotan (R. Y. et M. K.)—typus, in sandy place Higashirucharu (M. T. H.), Furubetsu (M. T. H.), Shana (M. T. H.), Bettobu—Porosu (M. T. H.).

Taraxacum hondoense NAKAI ex H. KOIDZUMI in Tokyo Bot. Mag. XLVII (1933) p. 119 cum var. *corniculato* et f. *glabello* et f. *longifolio*, in Journ. Jap. Bot. X (1934) p. 71, fig. 1-1, 2, p. 75, fig. 4-1, 14, 15, 16, p. 142, fig. 5-13, p. 144, fig. 6-14, 20, 28, p. 145,

fig. 7-13, 14.—HARA in Tokyo Bot. Mag. LII (1938) p. 182. Pl. IV, fig. 7, 2; Pl. VII, fig. 12, 1.

T. inugawaense H. KOIDZUMI, l. c. p. 97 cum f. *irregularipinnato*, l. c. p. 100 et f. *rotundato-obtusum*, l. c. p. 100, in Journ. Jap. Bot. X (1934) p. 146, fig. 8-30.

T. venustum H. KOIDZUMI in Tokyo Bot. Mag. XLVII (1933) p. 105 cum var. *geminum* et var. *ecorniculato*.

T. Miyabei H. KOIDZUMI in Tokyo Bot. Mag. XLVII (1933) p. 113.

T. brachyphyllum H. KOIDZUMI in Tokyo Bot. Mag. XLVII (1933) p. 109, in Journ. Jap. Bot. X (1934) p. 72, fig. 2-17, p. 144, fig. 6-17, p. 145, fig. 7-50.

T. rhodobasis H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 359, X (1934) p. 75, fig. 4-5, p. 142, fig. 5-5, 17, 18, p. 145, fig. 7-4, 36, 37, 38, p. 146, fig. 8-4.

T. napifolium H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 356, X (1934) p. 71, fig. 1-5, p. 72, fig. 2-13, p. 142, fig. 5-6, p. 144, fig. 6-10, p. 145, fig. 7-30, 31.

T. lanibasis H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 672.

T. robustius H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 564.

T. hondoense var. *robustum* H. KOIDZUMI in Tokyo Bot. Mag. XLVII (1933) p. 124.

T. longecaudatum H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 679.

T. sonchifolium H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 349, X (1934) p. 71, fig. 1-6, 15, 19, 20, p. 73, fig. 3-5, 6, 7, p. 142, fig. 5-10, p. 154, fig. 6-16, 31, p. 145, fig. 7-7, 11, 27, 28, 29, p. 146, fig. 8-16: based on abnormal individuals.

T. Tobai H. KOIDZUMI in Journ. Pl. Iwateken Vol. II (1934) p. 14.

T. tenuifolium H. KOIDZUMI, l. c. (1937) p. 102, 148 non KOCH in Flora XXIII (1940) p. 374.

T. Yukii H. KOIDZUMI in Journ. Jap. Bot. XII (1936) p. 621.

T. patulum H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 353.

T. towadense H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 676.

T. filicinum H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 350.

T. denticulato-marginatum H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 670.

T. pseudo-patulum H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 679.

T. Muraii H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 678.

T. tokachiense H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 560.

T. fujisanense H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 562.

T. inaense H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 561.

T. albociliatum H. KOIDZUMI in Journ. Jap. Bot. XI (1935) p. 561.

T. neorodobasis H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 680.

Radix saepe crassiuscula elongata perpendicularis simplex vel parce ramosa, collo saepe circ. 1 cm. diametro, modeste fusco-squamato saepe indiviso interdum 2-fido. Folia radicalia numerosa primum exteriora distincta patentia, demum interiora elongata ascendente intense viridia juniora plus minus araneo-pilosa demum glabrata, oblanceolato-oblonga basim versum attenuata breviter et distincte petiolata ad basim dilatata, petiolo viride interdum purpurascens, saepe pinnatifida v. profunde pinnatifida rarius pinnatilobata, laciniis multijugis triangulari-fulcatis saepe runcinatis obtusis acutisve denticulatis vel subintegris, interlobiis angustis ad costam non attingentibus, lobo apicali hastato-deltaideo vel depresso-rhomboideo apice obtuso mucronurato. Scapi 1-5, sub anthesi saepe quam folia breviores vel ea aequantes raro foliis longiores, primum plus minus araneopilosi demum denudati,

sub capitulo densissime intricato-floccosi. Involucrum sub anthesi 15–20 mm. longum in sicco, post anthesin 19–25 mm. longum, squamae exteriores adpressae $\frac{2}{3}$ – $\frac{1}{2}$ interiorum attingentes, late ovatae vel ovatae apice acuminatae interdum leviter incurvatae sub apice saepe ecorniculatae interdum parvicorniculatae, margine indistincte angustaque hyalinae, supra medium floccosae, dorso glabratae virides anguste nigrocostatae apice purpurascens, squamae interiores lanceolatae virides apice obtusae erosae saepe purpurascens ciliolatae distincte hyalino-marginatae interdum basi dilatatae sub apice ecorniculatae vel parvicorniculatae. Flores numerosi, corolla intense flava, marginalis 13.5–20.5 mm. longa 2–2.5 mm. lata dorso late nigro-striata, tubo 4.5–5.5 mm. longo ad faucem plus minus piloso. Antherae flavae, basi sagittatae, auriculis saepe inter se connatis apice erosis. Styli rami graciles flavi. Achenia compressa brunneo-straminea 4–5 mm. longa obovato-oblonga 1.2 mm. lata, capita elongatoconica vel breviter conica 1–1.5 mm. longa sub lente minutissime puberula vel glabrata, corpore in jugis primariis superne crebro spinuloso-muricata, spinulis validis, basim versus leviter contracta in tuberculos squamiformes sensim abeuntia, in jugis secundariis 2–3 squamoso-tuberculata. Rostrum 8–12 mm. longum. Pappus 5.5–8.5 mm. longus sordide albescens, setis copiosis gracillimis apice attenuatis sub lente minute scabris. Receptaculum alveolatum nudum.

Nom. jap. *Tampopo* (H. KOIDZUMI in 1933 sub *T. hondoensis*), *Yezo-tampopo* (H. KOIDZUMI in 1933 sub *T. venusto*), *Inugawa-tampopo* (H. KOIDZUMI 1933), *Asahigawa-tampopo* (H. K. 1933), *Yama-tampopo* (H. K. 1933), *Kaburaba-tampopo* (H. K. 1933), *Ashibuto-tampopo* (H. K. 1933), *Oni-tampopo* (H. K. 1933), *Hirohamitsude-tampopo* (H. K. 1934), *Usuba-tampopo* (H. K. 1937), *Koakaashi-tampopo* (H. K. 1936), *Iide-tampopo* (H. K. 1933), *Towada-tampopo* (H. K. 1934), *Gakuroku-tampopo* (H. K. 1934), *Fuji-tampopo* (H. K. 1935), *Ina-tampopo* (H. K. 1935), *Hime-tampopo* (H. K. 1935), *Akaashi-tampopo* (H. K. 1934), *Kamui-tampopo* (H. K. 1933), *Tokachi-tampopo* (H. K. 1935), *Keashi-tampopo* (H. K. 1934), *Okuyama-tampopo* (H. K. 1934), *Michinoku-tampopo* (H. K. 1934), *Iide-tampopo-modoki* (H. K. 1934).

Hab. in pratis siccioribus, secus vias vel fossas ad marginem silvarum vel in montibus. **Hokkaido.** Fl. mai–jun. *Ishikari*: mt. Kamui, Teshiomanaisawa (H. K. n. 19756 T.)—loc. typi *T. Miyabei*. *Asahigawa*, (H. K.)—typus dupl. *T. venusti*, ibidem (Y. SUGIHARA), Takasu (H. IWAMOTO), prope Asahigawa (H. K. T.)—typus dupl. *T. brachyphylli*. *Kushiro*: Kawayu (M. T.), Lac Kutcharo (M. T. H.), Ikenoyu (M. T. H.), Harutori (M. T.), prope Kushiro (M. T. H.). *Nemuro*: Ochiishi (M. T.), Kombumori (M. T. H.). *Tokachi*: Atsunai (H. YOKOYAMA M.)—typus *T. tokachiensis*, Ikeda (H. Y. M.). *Hidaka*: Shuba-bokujo (K. IWAYA), Shikano (H. H.), Enrumu-misaki (H. H.), Shoya (M. T. H.). *Shiribeshi*: Insula Okujiri (M. T.), ibidem (K. M. et Y. TOKUBUCHI T.), Zenibako (B. Y.), Hariusu (M. T. H.), Takashima (M. T. H.), ibidem (A. K.). *Kitami*: Shari (M. T. H.). *Oshima*: Fukuyama (M. T. H.), Esashi (M. T. H.), Kaminokuni (M. T. H.). **Hondo.** Fl. apr.–jun. *Mutsu*: Towadamura, Yakeyama (S. K.)—loc. typi *T. towadensis*, Aomori (N. KINASHI), Nesori (Y. F.), Ohata (S. MURAI M.)—typus *T. Muraii*, forma minor. Ohdose (S. M.), Yokouchi (K. IWAYA), Ohfukanai (K. IWAYA). **Rikuchu**: Iwayado prope Mizusawa (H. IWABUCHI), Mizusawa (H. I.), Kuroishi (H. I.), Iwayado (H. I.)—typus dupl. *T. Iwabuchii*, Sakuragawa (H. I.), Mizusawa (H. I.)—typus dupl. *T. hondoense* var. *suberecti*, Ashigase (S. K.)—loc. typi *T. Tobae*, Morioka (S. K.), Ide (H. I.), Kawame (Y. F.). *Ugo*: Kanpusan (H. M.), Akia (H. M.), Kosunagawa (H. M.), Araya (H. M.), Kisagata (H. M.). *Rikuzen*: Sendai (S. OKABE)—chromosomata $2n=24$ sec OKABE, ibidem

(E. IISHIBA M.), Ohya (K. N. M.). *Uzen*: Yonezawa (G. K.), Kaminoyama (Y. Y.)—typus dupl. *T. Yukii*, ibidem (S. K.), Yamagata (Y. Y.), Suishoyama (Y. Y.). *Iwashiro*: Fukushima (K. N. M.). *Iwaki*: Koseki (T. S.), Samekawa (Z. T.). *Hitachi*: mt. Nantai (H. T.). *Shimotsuke*: Nikko (T. N. T.)—typus, Kujira (T. N. T.), Senjogahara (Ch. H.), ibidem (R. NOGUCHI M.), Umagaeshi (Ch. H.). *Kotsuke*: mt. Haruna (J. S.), mt. Akagi (J. S.). *Musashi*: mt. Keishin (Y. SUGIHARA). *Shimosa*: Ichikawa (H. O. M.), Unga (K. HISAUCHI M.)—typus *T. lanibasis*. *Sagami*: Sengokuhara (H. Y.). *Kai*: Yoshida (J. S.), Yamanaka (J. S.), Mitsutoge (H. O. M.), Misato (G. K.), prope lacum Kawaguchi (S. K.). *Suruga*: mt. Fuji (M. HONDA et K. ISHII M.)—typus *T. fujisanensis*, Kagosakatoge (Y. K.). *Shinano*: Kamishiro, Tomiyama, Inugawadani (H. K. T.)—typus dupl. *T. inugawaensis*, Iida (H. K. T.), Ohtamura (H. KOIDZUMI M.)—typus *T. pseudopatuli* forma depauperata, Kirigamine (H. T.), Ojiyama (M. MAKINO-UCHI), Kamikochi (G. K.), ibidem (Z. T.), Shimajimadani (G. K.), Inatomi (H. T.), Asamayama (H. ITO T.), Shibutoge (H. KOIDZUMI M.)—typus *T. longicaudati*, forma depauperata, Oiwake (T. KONDO T.), Matsumoto (H. K.), Kawabe (K. MIZUNO). *Yechigo*: Kashiwazaki (M. NAKAMURA), Karihagun, Betsusan (Y. IKEGAMI), Kamo, Umedzu (Y. IKEGAMI). *Yetchu*: Miyazaki (T. O.), mt. Tateyama (G. K.), Yabutamura (T. O.), Tutagamiyama (T. O.). *Noto*: Konosu (S. K.), Sannami, Yanami (H. H. T.). *Kaga*: Kanazawa (G. K.).

f. **rubicundum** (G. KOIDZUMI) H. KOIDZUMI in Tokyo Bot. Mag. XLVII (1933) p. 123, in Journ. Jap. Bot. XII (1936) p. 714.

T. platycarpum var. *rubicunda* KOIDZUMI in Tokyo Bot. Mag. XXXVIII (1924) p. 95.

Corolla albo-flavescens apice rubescens.

Nom. jap. *Benibana-tampopo* (G. KOIDZUMI 1924).

Hab. *Shinano*: Misayama (H. K.)—typus, Kumashiro, Hagino (H. KOIDZUMI T.).

f. **albo-flavescens** H. KOIDZUMI in Tokyo Bot. Mag. XLVII (1933) p. 123, in Journ. Jap. Bot. XII (1936) p. 714.

T. inugawaense f. *albo-flavescens* H. KOIDZUMI in Tokyo Bot. Mag. XLVII (1933) p. 100.

Corolla albo-flavescens.

Nom. jap. *Usujiro-tampopo* (H. KOIDZUMI 1933), *Usugi-inugawa-tampopo* (H. KOIDZUMI 1933).

Hab. **Hondo**. *Kai*: circa Kofu (H. K. T.). *Hitachi*: mt. Nantai (H. T.). *Iwaki*: Koseki (T. SUZUKI).

f. **dissectissimum** H. KOIDZUMI in Journ. Jap. Bot. XII (1936) p. 715.

T. hondoense subsp. *dissectissimum* H. KOIDZUMI in Tokyo Bot. Mag. XLVII (1933) p. 124.

T. dissectissimum H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 676.

T. subbipinnatum H. KOIDZUMI, l. c. p. 684.

T. hastato-trilobatum H. KOIDZUMI in Journ. Pl. Iwateken II (1934) p. 10.

Folia dissectissima, laciniis multijugis approximatis lanceolatis pinnatilobatis, lobo terminali parvo hastato apice acuminato.

Nom. jap. *Kireha-tampopo* (H. KOIDZUMI 1933).

Hondo. *Ugo*: Kisagata (H. MURAMATSU). *Rikuchu*: Wakayanagi (H. IWABUCHI), Yesashi, Iwayado, Tateyama, Sugibayashi (S. K.)—loc. typi *T. hastato-trilobati*, Teshiromori (Y. F.). *Rikuzen*: Nakaniita (Ch. SUZUKI). *Shinano*: Nakawa (G. K.). *Uzen*: inter mt. Haguro et Gassan (F. M. et H. H. T.). *Kai*: Nishiyama (G. K.). *Yetchu*: Yabutamura (T. O.). *Mino*: Tajimi (K. SHIWOTA)—corolla pallide flavescens.

f. **tubiflorum** (H. KOIDZUMI) KITAMURA in Jap. Journ. Bot. XIII (1948) p. 498.

T. hondoense var. *tubiflorum* H. KOIDZUMI in Journ. Jap. Bot. XII (1936) p. 716.

T. tubiflorum H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 352.

Corolla tubulosa.

Nom. jap. *Kudazaki-tampopo* (H. KOIDZUMI 1933), *Kudaben-tampopo* (H. K. 1936).

Hab. in horto culta. **Kiushiu**. *Chikugo*: Jendoji (E. MATSUDA). *Hizen*: Nagasaki (S. TOYAMA). Sponte crescens. *Rikuzen*: Matsusakimura (sec H. K.).

var. **leiophyllum** (H. KOIDZUMI) KITAMURA in Jap. Journ. Bot. XIII (1948) p. 498. Pl. IV, fig. 7, 1; Pl. VII, fig. 12, 2.

T. leiophyllum H. KOIDZUMI in Tokyo Bot. Mag. XLVII (1933) p. 102.

T. nudicolum H. KOIDZUMI, l. c. p. 117, in Journ. Jap. Bot. X (1934) p. 73, fig. 3-14, p. 142, fig. 5-25, p. 145, fig. 7-46, 60.

T. Hatsuroi H. KOIDZUMI, in Journ. Pl. Iwateken II (1937) p. 103, cum var. *mino*.

T. spatulatum H. KOIDZ., l. c. II (1934) p. 10.

T. cirsiiifolium H. KOIDZUMI, l. c. II (1934) p. 13.

T. Iwabuchii, l. c. p. 8.

T. pseudosachalinense H. KOIDZUMI, l. c. p. 9.

T. aristatum H. KOIDZUMI in Tokyo Bot. Mag. XLVII (1933) p. 111, in Journ. Jap. Bot. X (1934) p. 72, fig. 2-19, l. c. p. 142, fig. 5-11, 12, p. 144, fig. 6-27, p. 145, fig. 7-25, p. 146, fig. 8-19.

Involucri squamae exteriores margine semper late alborubescens dorso nigro-viridescens.

Nom. jap. *Iwate-tampopo* (H. KOIDZUMI 1933), *Hana-tampopo* (H. K. 1933), *Saruiwa-tampopo* (H. K. 1937), *Azami-tampopo* (H. K. 1934), *Nanbu-tampopo* (H. K. 1934), *Kumadori-tampopo* (H. K. 1934), *Noge-tampopo* (H. K. 1933).

Hab. **Hondo**. saepissime in montibus. *Rikuchu*: mt. Iwate ad summam (S. K.)—loc. typi *T. leiophylli*, Iwayado, Tateyama (H. IWABUCHI), ibidem (S. K.)—loc. typi *T. pseudosachalinensis*, Iwayado, Tateyama (H. IWABUCHI), ibidem (S. K.)—loc. typi *T. Iwabuchii*, Wakayanagi, Saruiwa (H. IWABUCHI)—typus dupl. *T. Hatsuroi*, ibidem (H. IWABUCHI)—typus dupl. *T. Hatsuroi* var. *mini*, Sennintoge (S. K.)—loc. typi *T. cirsiiifolii*, mt. Himegami (Y. F.), ibidem (S. K.), Ide (H. IWABUCHI). *Mutsu*: mt. Iwaki ad summam (S. K.), Nesori (Y. F.). **Hokkaido**. *Oshima*: Onuma, Tomenoyu (A. KIMURA et. M. TATEWAKI), Hakodate (F. C. G. H.), Yesashi, Kamomejima (M. T.), Kamiiso (M. T. H.), Kaminokuni (M. T. H.), Fukuyama (M. T. H.). *Kushiro*: prope Kawayu (M. T.), Wakoto (M. T. H.), Ikenoyu (M. T. H.). *Shiribeshi*: Natsuka (M. T. H.). *Ishikari*: Sapporo (K. MIYABE), mt. Kamui, Teshaomanaisawa (H. K. T.)—typus dupl. *T. aristati*, Kamuikotan (H. K. T.)—typus dupl. *T. nudicoli*. *Kitami*: Abashiri (M. T. H.), Shari (M. T. H.), Tofutsu (M. T. H.).

Taraxacum hondoense is widely distributed in middle and northern Hondo and Hokkaido, and is a common weed of spring. The leaves and rhizomes are edible.

The writer observed this species in the fields and cultivated in the garden of the Kyoto Imperial University, many individuals of *T. hondoense* collected from numerous H. KOIDZUMI's type localities of synonyma of *T. hondoense*, since 1933.

The outer leaves of *T. hondoense* are spreading. The inner leaves which develop in late spring are ascending. The scapes of *T. hondoense* varies in their length, even in the same plant. Those produced in early spring are usually shorter and those in late spring are longer.

The hairs on the corolla of *T. hondoense* varies considerably in its length and density. This fact is observed in the individuals collected at the same locality. Moreover there are very often, on the corollas of *Taraxaca* hair-like threads produced by fungi during the preparation of specimens. The minute protuberances on the surface of the achenes are observed only by the microscope. The writer observed the minute protuberances regarding many individuals collected at the same localities. This varies considerably. This character has no taxonomic value. The petiols of *T. hondoense* are sometimes red-purple. This fact is observed everywhere.

Taraxacum platycarpum DAHLSTEDT in Acta Horti Berg. IV (1907) p. 14, fig. 3-6, tab. I, fig. 16-22, in FEDDE, Rep. VII (1909) p. 136.—OSAWA in Archiv. Zellforsch. bd. X 1913 p. 452.—YASUI in Tokyo Bot. Mag. XXVII (1913) p. (493).—KOIDZUMI in Tokyo Bot. Mag. XXXVIII (1924) p. 95.—MAKINO, Ill. Fl. Nipp. (1940) p. 8, fig. 23.—H. KOIDZUMI in Journ. Jap. Bot. X (1934) p. 315, in Tokyo Bot. Mag. L (1936) p. 146, in Journ. Jap. Bot. XII (1936) p. 816. Pl. VI, fig. 10, 4.

T. officinale var. *corniculatum* (non KOCH et ZIZ.), FR. et SAV., Enum. Pl. Jap. I (1875) p. 269.—MATSUM., Index Pl. Jap. II (1912) p. 668.

T. officinale var. *obovatum* (non DC.) FR. et SAV., Enum. Pl. Jap. I (1875) p. 269.

T. foliosissimum H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 671.

T. denticorne H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 673.

T. Hisauchii H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 668.

T. platycarpum var. *ecorniculatum* H. KOIDZUMI in Tokyo Bot. Mag. L (1936) p. 146.

T. luteopapposum H. KOIDZUMI in Journ. Jap. Bot. XII (1936) p. 623.

T. Tsurumachii KITAMURA in Acta Phytotax. Geobot. III (1934) p. 107, VI (1937) p. 21.

T. hitachiense H. KOIDZUMI in Journ. Jap. Bot. XII (1936) p. 622.

T. mongolicum H.-Mzt., Monogr. *Tarax.* (1907) p. 67 pro parte.

Radix elongata crassiuscula, collo vix squamato, 1-pluricephalo. Folia numerosa patentia vel ascendunt oblanceolato-lineariter 15-27 cm. longa viridia, in petiolum exalatum attenuata, tantum inciso-dentata vel plerumque pinnatifida, laciniis 6-8 jugis saepe runcinatis triangularibus apice obtusis acutisve margine subintegris vel inciso-dentatis, interlobiis angustis, lobo terminali magno oblongo-triangulari vel deltoideo obtuso interdum apiculato, utrinque parce araneosa, interdum petiolo rubescente, plerumque pallido. Scapi plures quam folia breviores vel ea aequantes, primum dense arachnoidei demum glabrescentes sed sub capitulo dense floccosi. Involucrum sub anthesi 15-16 mm. longum post anthesin 17-20 mm. longum apice 25-27 mm. latum in sicco, squamae virides, exteriores adpressae, interiores ovatae vel ovato-oblongae, superiores oblongae plerumque mediam partem interiorum aequantes margine indistincte anguste hyalinae interdum denticulatae, supra medium sparse puberulae, interdum apice rosascentes, apice corniculis mediocribus vel magniusculis plus minus compressis, interdum parce denticulatis praeditae, squamae interiores lineari-lanceolatae apice nigro-purpurascens, sub apice saepe corniculis mediocribus parvisve saepe rosascentes praeditae, interdum ecorniculatae. Corolla lutea, marginalis 15-17.5 mm. longa, tubo 5-6.5 mm. longo ad faucem piloso, ligula 2-2.5 mm. lata subtus stria lata nigrescente ornata interdum superne rosascentes. Stylus cum stigm. flavescens. Antherae flavae polliniferae. Achenia brunnea vel straminea, corpore oblongo 3-3.5

mm. longa 1.2–1.5 mm. lata supra $\frac{2}{3}$ vel supra medium valide spinuloso-tuberculata apice in pyramidem 0.6–1 mm. longam sensim abeuntia, facie saepe 6 sulcata basim versus contracta laevia, rostro 7–8.5 mm. longo, pappo sordide albescente 6–7 mm. longo.

Nom. jap. *Kwanto-tampopo* (H. KOIDZUMI 1933), *Yenoshima-tampopo* (H. K. 1934), *Hitachi-tampopo* (KITAMURA 1934).

Hab. in pratis siccioribus. **Hondo.** Fl. april.–jun. *Musashi*: Tokyo Koishikawa Bot. Gard. (S. K.)—loc. typi, Tokyo (T. M. T.). *Shimosa*: Choshi (K. SHIRO T.), Matsudo (Y. SUGIHARA), Kofudai (J. S.), Naritaeki (S. NISHIMURA), Inage (T. SUZUKI). *Awa*: mt. Kiyozumi (T. N. T.), Amatsu (T. N. T.). *Hitachi*: Kegano (H. TSURUMACHI), Oba (H. T.), Mito (H. T.), Kushigata (H. T.), Hiraiso (H. T.), Inari (H. K. T.)—loc. typi *T. hitachiensis*, Iwama (H. T.), mt. Tsukuba (H. T.), Inarimura (H. T.), Shio (H. T.)—typus *T. Tsurumachii*. *Sagami*: Tsurumi (K. HISAUCHI M.)—typus *T. foliosissimi*, Shichirigahama (M. T.), Nishihatano, Shibusawa (Y. FURUSE T.)—typus dupl. *T. luteopapposi*, Fujisawa (M. T.), Kugenuma (M. T.), Yenoshima (M. T. H.)—loc. typi *T. denticornis*. *Idzu*: insula Oshima (Y. JOTANI). *Kai*: circa lacum Kawaguchi (S. K.). *Suruga*: Gotenba (S. K.).

f. **rubescens** KITAMURA in Jap. Journ. Bot. XIII (1948) p. 499. Pl. VII, fig. 12, 7.

Flores intense rubescentes inferne albo-flabescentes.

Nom. jap. *Benifude* nom. hort.

Hab. in horto culta. **Hondo.** *Yamashiro*: Kioto (S. K.).

f. **albo-flavescens** H. KOIDZUMI in Journ. Jap. Bot. XII (1936) p. 817.

T. Hisauchii H. KOIDZUMI in Tokyo Bot. Mag. XLVIII (1934) p. 668.

Corolla albo-flavescens.

Nom. jap. *Usujiro-kwanto-tampopo* (H. KOIDZUMI 1936).

Hab. **Hondo.** *Musashi.* *Sagami*: Yokohama (K. HISAUCHI M.)—forma depauperata, typus *T. Hisauchii*.

Taraxacum sendaicum KITAMURA in Acta Phytotax. Geobot. III. (1934) p. 104.

T. platycarpum var. *sendaicum* (KITAMURA) H. KOIDZUMI in Tokyo Bot. Mag. L (1936) p. 147.

Abs *T. platycarpo* involucri squamis exterioribus oblongis, supra medium interiorum attingentibus distinguendum.

Radix elongata pluricephala, collo lanuginoso vix squamato. Folia pauca oblanceolata 15 cm. longa 2–2.5 cm. lata apice acuta mucronulata basi longe in petiolum elongatum angustata, utrinque primum pilosa demum glabrata, rarius grosse dentata, plerumque pinnatiloba-fida, laciniis fere patentibus depresso-deltoides vel elongato-triangularibus apice obtusis vel acuminatis mucronulatis margine integris vel minute mucronulato-serratis, interlobiis angustis, lobo terminali triangulari mediocri integro. Scapi plures florendi tempore foliis longiores vel ea aequantes pilosi sub involucro dense floccosi. Capitula erecta mediocria. Involucrum sub anthesi 13–15 mm. longum basi rotundatum, squamae exteriores supra medium interiorum attingentes semper oblongae circ. 7 mm. longae 3 mm. latae acutae usque distincte corniculatae sparse ciliolatae indistincte angustaeque albo-marginatae, interiores lanceolatae apice nigres-

centes corniculis parvis praeditae. Corolla flava apice rosascens circ. 19 mm. longa, tubo 6.5 mm. longo ad faucem longe piloso, ligula subtus stria lata nigrescente ornata. Chromosomata $2n=16$. sec S. OKABE.

Nom. jap. *Sendai-tampopo* (S. KITAMURA 1934).

Hab. **Hondo**. *Rikuzen*: Sendai in horto Univ. Imp. Tohoku. (S. O.)—typus, Sendai (G. K.).

***Taraxacum elatum* KITAMURA** in Acta Phytotax. Geobot. II (mars 1933) p. 118 pro parte quoad typ. Pl. IV, fig. 6, 3.

T. japonicum H. KOIDZUMI in Tokyo Bot. Mag. XXXVIII (1924) p. 96, pro parte min. quoad specim. ex mt. Ibuki.

T. minoense H. KOIDZUMI in Journ. Jap. Bot. IX (oct. 1933) p. 353, X (1934) p. 72, fig. 2-9.

T. yetchuense H. KOIDZUMI in Journ. Jap. Bot. IX (oct. 1933) p. 354.

T. kisoense H. KOIDZUMI in Journ. Jap. Bot. IX (oct. 1933) p. 350.

Radix elongata simplex, collo vix squamato simplici vel pluricephalo. Folia pauca vel numerosa patentia vel ascendentia oblanceolato-lineariter 15-35 cm. longa 3.5-8 cm. lata basi sensim angustata longe breviterve petiolata, petiolis exalatis, profunde pinnatifida, laciniis 7-10 jugis patentibus vel leviter reflexis approximatis triangularibus vel deltoideis apice acutis obtusisve margine varie laceratis, lobo apicali parvo vel magno deltoideo vel depresso-rhomboideo integro acuto mucronulato praedita, utrinque demum glabrescentia sed juniora sparse pilosa. Scapi 3-4 sub anthesi foliis breviores vel longiores post anthesin elongati erecti primum arachnoidei demum glabrescentes sed sub capitulo dense floccosi. Capitula 3-4 cm. diametro. Involucrum sub anthesi 14-15 mm. longum post anthesin 17-20 mm. longum viride, squamae exteriores adpressae vel erectae $\frac{2}{5}$ - $\frac{1}{2}$ interiorum attingentes, lanceolatae vel oblongae 5-7 mm. longae sub apice parvicorniculatae vel callosae, leviter rosascentes margine supra medium parce breviterque villosae indistincte hyalino-marginatae, interiores lineari-lanceolatae apice obtusae parvi-corniculatae vel eorniculatae callosae nigro-purpurascens margine hyalino-membranaceae. Corolla lutea marginalis 15-18 mm. longa, extus stria lata nigrescente ornata, tubo circ. 5 mm. longo ad faucem sparse interdum densiuscule puberulo. Stylus cum stigm. nigrescens. Achenium anguste oblongum stramineum vel brunneo-stramineum vel griseo-stramineum, corpore 3.5-4.5 mm. longum 1.2 mm. latum facie saepe 2-3 sulcatum supra $\frac{2}{3}$ spinuloso-tuberculatum basim versus laeve angustatum, apice in pyramidem 1.2-1.5 mm. longam sensim abiens, rostro 7-9 mm. longo, pappo 7-8 mm. longo, sordide albo-flavescente.

Nom. jap. *Seitaka-tampopo* (S. KITAMURA 1933), *Mino-tampopo* (H. KOIDZUMI 1933), *Yetchu-tampopo* (H. K. 1933), *Kiso-tampopo* (H. K. 1933).

Hab. in pratis vel in silvis. **Hondo**. Fl. apr.-jun. *Ohmi*: Takashimagun, Kawakami (Ch. H.)—typus, ibidem (S. K.), Maibara (Ch. H.), mt. Ibuki (G. K.), ibidem (S. K.), Nagaoka (S. K.), Hikone (Ch. H.), Shunjo (G. K.), Samegodani (Ch. H.), Yanagase (G. K.), Tamanoo (Ch. H.), Shimotanakami (Ch. H.), Nishioji (Ch. H.). *Yechizen*: Fukui (Z. T.), Tsuruga (Y. HORI), Omushi (Y. H.), Tsuruga (H. K. T.), Ono (Z. T.), Sakai (Y. H.). *Kaga*: Nomigun, Shita-osugi (Y. SHIROSAKI). *Noto*: Togitoge (K. SHINNO). *Yetchu*: Ogami (T. O.), Minotani (T. O.)—typus dupl. *T. yetchuensis*. *Hida*: Takane (G. K.). *Shinano*: Azumi (G. K.), Kiso,

Nishiogawadani (H. K. T.)—typus dupl. *T. kisoensis*, Kiso (H. K. n. 11166 T.). *Mino*: Kamadamura (K. SHIWOTA), Ishidsu (M. HAMA), Tajimi (K. SHIWOTA), Tokuda (M. HAMA), Neo (G. K.), Kurono (M. HAMA), Makita (M. HAMA), Hodsumi (M. HAMA), Minamikuisse (M. HAMA), Namadsu (M. HAMA), Aohaka (M. H.), Kitanagamori (M. H.), Hida (K. SHIWOTA), Sakashita (K. SHIWOTA)—loc. typi *T. minoensis*. *Ise*: Fujiwaradake (Y. SONODA).

Abs *T. japonico* involucro semper majore, squamis exterioribus majoribus distinguendum.

var. **ibukiense** KITAMURA in Jap. Journ. Bot. XIII (1948) p. 499.

Involucri squamae dorso semper nigroviridescentes margine anguste albob-membranaceae, ceterum ut typo. Involucrum sub anthesi 16–17 mm. longum, squamae exteriores oblongae 6.5 mm. longae margine crispato-puberulae apice acuminatae subecorniculatae.

Nom. jap. *Ibuki-tampopo* (KITAMURA 1948).

Hab. in montibus. **Hondo**. *Ohmi*: mt. Ibuki supra 700 m. (S. K.)—typus, ibidem (Ch. H.).

var. **deforme** KITAMURA in Journ. Jap. Bot. XIII (1948) p. 499.

Scapi apice saepe conspicue incrassati. Involucrum sub anthesi circ. 18 mm. longum, squamae exteriores deformes, nunc ovato-oblongae 10–11 mm. longae 4.5–5 mm. latae apice acuminatae nunc oblongae vel anguste oblongae 7–8 mm. longae 2–2.5 mm. latae. Achenia fertilia.

Nom. jap. *Nagaoka-tampopo* (KITAMURA 1948).

Hab. cum *T. elato* mixte crescens. **Hondo**. *Ohmi*: Nagaoka (S. K.)—typus, Yanagase (G. K.).

Taraxacum Arakii KITAMURA in Acta Phytotax. Geobot. II (1933) p. 182. Pl. III, fig. 5, 2.

T. Arakii var. *ecorniculatum* H. KOIDZUMI in Journ. Jap. Bot. XII (1936) p. 820.

T. iyoense H. KOIDZUMI in Journ. Jap. Bot. XII (1936) p. 624.

T. albofimbriatum H. KOIDZUMI, l. c. p. 626.

Radix elongata crassiuscula simplex, collo vix squamoto. Folia patentia vel ascenduntia lineari-lanceolata usque ad 30 cm. longa plerumque 16–22 cm. longa 3–5 cm. lata apice obtusa rotundata vel mucronulata basi in petiolum sensim angustata, utrinque juniora pilosa seniora glabrata pinnatifida, laciniis 6–8 jugis elongato-triangularibus vel lanceolatis plerumque patentibus apice acutis obtusive mucronulatis margine ad basim inciso-dentatis, interlobiis latiusculis ciliato-serratis, lobo terminali parvo depresso-deltoides apice obtuso interdum leviter caudato integro. Scapi plures sub anthesi quam folia breviores vel ea aequantes primum araneosi demum glabrati, sub capitulo dense floccosi. Involucrum sub anthesi 15–18 mm. longum, post anthesin 22–24 mm. longum, squamae exteriores adpressae interiorum longitudinis $\frac{2}{3}$ – $\frac{1}{2}$ attingentes oblongo-ovatae vel ovatae 7–9 mm. longae 4–4.5 mm. latae, rarius lanceolatae, apice plus minus caudatae ecorniculatae vel minute corniculatae, omnes hyalino-membranaceae ad costam viridescens margine praecipue superne rosascentes, dense villosae, interiores linearilanceolatae circ. 15 mm. longae apice ecorniculatae vel parvicorniculatae, purpureo-nigrescentes plerumque glabrae rarius sparse cilio-

latae. Corolla flava, marginalis circ. 20 mm. longa, tubo 5 mm. longo, superne pilis unicellulatis paucis praedito, ligula subtus stria lata nigrescente notata. Stylus cum stigmatibus fusciscens. Antherae flavae. Achenia straminea vel fusco-brunnea oblongo-fusiformia plus minus compressa 5 mm. longa 1.5 mm. lata, facie 2-3 sulcata superne valide spinuloso-tuberculata in pyramidem 0.5-1 mm. longam sensim abeuntia, infra medium obsolete tuberculata gradatim angustata, rostro 9 mm. longo. Pappus sordide albescens 8-9 mm. longus.

Nom. jap. *Yamazato-tampopo* (Y. ARAKI 1933), *Iyo-tampopo* (H. KOIDZUMI 1936), *Hosoba-usugi-tampopo* (H. KOIDZUMI 1936).

Hab. in montibus. **Hondo.** Fl. apr.—mai. *Tajima*: Higashi-tokonooyama (Y. A.)—typus, mt. Myoken (Y. A.), Uzuka (Z. T.), Darugami (Y. A.), Yamaguchimura (Y. A.). *Tamba*: Kami-toyozu (Y. A.), Kami-kawachi (Y. A.). *Idzumo*: Mihogaseki (I. MARUYAMA), Fuse (I. M.). *Bitchu*: Aratomura (K. YAMAGUCHI). *Inaba*: Kamo (Y. IKOMA T.). **Shikoku.** *Iyo*: Ukenamura, Koya (T. IMAIZUMI)—typus dupl. *T. iyoensis*, Kunomura, Narukawa (T. IMAIZUMI)—typus dupl. *T. albofimbriati*. *Tosa*: Higashitoyonaga (T. YOSHINAGA).

Taraxacum Arakii differs from *T. kiushianum* in its larger heads.

***Taraxacum ceratolepis* KITAMURA** in Acta Phytotax. Geobot. II (1933) p. 183. Pl. V, fig. 8, 2.

Radix elongata crassiuscula simplex collo vix squamato lanigero. Folia ascendentia obovato-oblonga 12-28 cm. longa 1.8-7.5 cm. lata apice obtusa basi in petiolum sensim angustata utrinque juniora pilosa seniora glabrata raro tantum dentata plerumque pinnatifida, laciniis raro deltoideis plerumque elongato-triangularibus 6-8 jugis incisodentatis patentibus vel porrectis plerumque leviter retrorsum arcuatis, interlobiis angustis vel interdum obsolete ciliato-denticulatis, lobo terminali magno deltoideo vel depressodeltoideo interdum subhastato, apice obtuso mucronulato margine saepe integro raro grosse dentato. Scapi plures florendi tempore foliis paulo breviores denique valde elongati, primum araneosi demum glabrescentes, sub capitulo longe lanigeri. Capitula lutea erecta circ. 5 cm. diametro. Involucrum sub anthesi 18-21 mm. longum basi rotundatum, squamae exteriores longitudine interiorum $\frac{3}{4}$ breviores iisque aequilatae subpatentes, oblongae apice corniculis conicis 1.5-2 mm. longis acutis vel obtusis instructae, margine ciliolatae extus glabrae, interiores lanceolatae apice parvicorniculatae. Corolla lutea marginalis circ. 22 mm. longa, tubo 6 mm. longo, ligula subtus stria lata fusciscente ornata. Stylus cum stigm. fusciscens. Achenia fusco-brunnea oblonga, corpore 4-5 mm. longa 1.7 mm. lata 2 sulcata apice spinuloso-muricata in cuspidem circ. 1 mm. longam subabrupte abeuntia, basi angustata minus tuberculata, rostro 10 mm. longo. Pappus sordide albus 9 mm. longus.

Nom. jap. *Kensaki-tampopo* (Y. ARAKI 1933).

Hab. **Hondo.** Fl. mai. *Tamba*: Higashiyatamura, Uesugi (Y. A.)—typus. *Idzumo*: Akaya (T. HIROE).

Clavis *Taraxacorum* Koreanorum Formosanorumque

1. Involucrum majus sub anthesi 18-20 mm. longum, squamae exteriores supra medium interiorum attingentes oblongae distincte corniculatae. Folia plerumque latissima
.....**T. latifolium.**

- Involucrum minus. Folia plerumque angustiora..... 2.
2. Involucri squamae exteriores distincte albo-marginatae, ovato-oblongae vel oblongae ecorniculatae vel parvicorniculatae. Involucrum 14–18 mm. longum.....**T. platyepidum.**
Involucri squamae virides non distincte albo-marginatae..... 3.
3. Involucrum parvum sub anthesi 9–13 mm. longum atro-viride basi saepe turbinatum, squamae exteriores oblongo-lanceolatae ecorniculatae parce pilosae. Scapi glabri **T. hallaisanense.**
Involucrum mediocrem, viride vel dilute viride basi rotundatum. Scapi sub capitulo floccosi 4.
4. Involucri squamae exteriores ovatae ad vel infra medium interiorum attingentes. Achenia semper tantum apice spinuloso-tuberculata, ceterum striata.....**T. Ohwianum.**
Involucri squamae exteriores oblongo-lanceolatae vel lineari-lanceolatae ad vel supra medium interiorum attingentes. Achenia tota tuberculata 5.
5. Corolla alba vel albo-flavescens. Involucrum 15–18 mm. longum dilute viride, squamae exteriores supra medium interiorum attingentes oblongo-lanceolatae**T. coreanum.**
Corolla flava. Involucrum viride..... 6.
6. Involucrum 12 mm. longum, squamae exteriores oblongo-lanceolatae ad vel supra medium interiorum attingentes densiuscule pilosae praecipue apice saepe floccosae **T. mongolicum.**
Involucrum 15–16 mm. longum, squamae exteriores lineares vel linearilanceolatae supra medium interiorum attingentes, distincte corniculatae parce pilosae.....**T. formosanum.**

Taraxacum latifolium KITAMURA in Acta Phytotax. Geobot. II (1933) p. 120.

Pl. III, fig. 4, 2.

T. variegatum KITAGAWA in Rep. Inst. Sci. Res. Manch. II (1938) p. 303, fig. 1.

Radix elongata saepe simplex, collo non squamato. Folia late oblonga 15–28 cm. longa 6–10 cm. lata apice obtusa vel acuta basi in petiolum brevem alatum angustata profunde pinnatifida, laciniis lateralibus patentibus vel erecto-patentibus raro reflexis amplis 4–5 jugis approximatis elongato-triangularibus apice acutis aut acuminatis basi dentatis vel incisis, interlobiis angustis incisis vel subintegris, lobo terminali parvo depresso-rhomboideo apice saepe acuto, utrinque ad costam densiuscule pilosa. Scapi plures sub anthesi quam folia breviores vel ea aequantes sparsissime pilosi sub capitulo dense pilosi. Involucrum majus sub anthesi 18–20 mm. longum, post anthesin 20–23 mm. longum, squamae exteriores erectae paucae supra medium interiorum attingentes, oblongae vel oblongo-lanceolatae 8–10 mm. latae apice caudatae, corniculis conicis 1–1.5 mm. longis obtusis instructae sparse pilosae interdum inferiores ecorniculatae callosae, margine indistincte anguste hyalinae sparse pilosae vel subglabrae, extus glabrae, squamae interiores lineari-lanceolatae 14–16 mm. longae circ. 3 mm. latae apice acute parvi-corniculatae vel ecorniculatae callosae nigrescentes glabrae. Corolla lutea marginalis 18–19 mm. longa, tubo 4.5 mm. longo ad faucem puberulo, ligula 2 mm. lata subtus stria lata nigrescente notata. Stylus cum stigmatibus leviter fuscens. Achenia obovato-oblonga brunnescentia corpore 3.5–4 mm. longa 1–1.5 mm. lata apice in pyramidem 0.5–1 mm. longam subabrupte abeuntia superne spinuloso-tuberculata deorsum minus tuberculata et angustata. Rostrum 9–10 mm. longum. Pappus 8 mm. longus.

Nom. jap. *Hiroha-tampopo* (KITAMURA 1933), *Yogore-tampopo* (KITAGAWA 1938).

Hab. in montibus. **Korea.** Fl. jun.-jul. *Kanhoku*: inter Yengando et Josen (J. O.)—typus, Banshun (T. S.), inter Kakuho et Koei (T. S.), Riudai (T. S.), Shojo (T. S.).

Distr. Manshuria.

This species has the large involucre which are 18–20mm. long at the anthesis, and the very broad leaves.

***Taraxacum hallaisanense* NAKAI** in Tokyo Bot. Mag. XXIX (1915) p. 11, Fl. Sylv. Kor. XIV (1923) p. 123.—MORI, Enum. Pl. Cor. (1922) p. 372. Pl. III, fig. 5, 3.

T. sinicum (non KITAGAWA) KITAMURA in Acta Phytotax. Geobot. IV (1935) p. 104 pro parte quoad pl. ex. Korea.

Planta plerumque parva. Radix saepe simplex elongata raro parce ramosa, collo parce squamato, 1-pluricephalo. Folia oblanceolata vel lineari-oblanceolata 5–14.5 cm. longa 9–20 mm. lata apice obtusa raro acuminata basi in petiolum longum vel brevem angustata juniora albo-pilosa seniora glabrata saepe profunde pinnatifida, laciniis 4–6 jugis saepe runcinatis approximatis ovato-lanceolatis vel interdum remotis anguste oblongis apice acutis vel obtusis margine integris vel antice minute denticulatis, lobo terminali mediocri deltoideo vel hastato. Scapi plures sub anthesi folia aequantes glabrati, sub capitulo saepe nudi. Involucrum parvum sub anthesi 9–13 mm. longum, atro-viride saepe angustum basi saepe turbinatum, squamae exteriores saepe ad medium raro infra medium interiorum attingentes adpressae oblongae vel oblongo-lanceolatae rarius inferiores lineari-lanceolatae margine anguste et obsolete hyalinae raro late albo-marginatae supra medium sparse pilosae ecorniculatae raro parvicorniculatae roseo-nigrescentes, squamae interiores lineari-lanceolatae apice obtusae ecorniculatae glabrae roseo-nigrescentes. Corolla flava marginalis 13–18 mm. longa, tubo 4.5–5.5 mm. longo ad faucem glabrato, ligula subtus stria lata nigrescente notata. Stylus cum stigmatibus fuscens. Achenia brunnea corpore 3 mm. longa 1 mm. lata apice in pyramidem 0.6 mm. longam subabrupte abeuntia, superne spinuloso-tuberculata, spinulis validis erecto-patentibus, infra medium tuberculis obsoletis striata sensim angustata, rostro 6 mm. longo. Pappus albescens 6 mm. longus.

Nom. jap. *Iwatampopo* (T. MORI 1922), *Tanna-tampopo* (T. NAKAI 1923).

Hab. **Korea.** in montibus. Fl. apr.–aug. Quelpaert in lapidosis inundatis siccis montis Hallaisan (T. N. T.)—typus, ibidem (M. BOKU), ibidem 1200 m. (K. N.), prope Kannonji (K. N.), Seikiho (K. KATAKURA), insula Quelpaert (J. O.), ibidem (E. T. n. 244). *Keiki*: Suigen, Kwasan (T. SAKATA), Keijo (M. BOKU).

This species was published earlier than any other species in Korea and Manshuria, except *T. mongolicum*. This is a very distinct species with its small and narrow involucre subtended by the usually glabrous scape. *T. hallaisanense* is distinguished from *T. mongolicum*, by its outer involucral scales which are black green and broader and tapering to the apex and usually not so densely pilose.

***Taraxacum Ohwianum* KITAMURA** in Acta Phytotax. Geobot. II (1933) p. 124.—KITAGAWA in Tokyo Bot. Mag. XLVII (1933) p. 829, fig. 5, fig. 10–7. Pl. VI, fig. 4, 1; Pl. VII, fig. 12, 4.

T. asiaticum (non DAHLST.) NAKAI in Tokyo Bot. Mag. XLVI (1932) p. 62.

T. mandshuricum NAKAI ex H. KOIDZUMI in Tokyo Bot. Mag. L (1936) p. 89.

Radix elongata simplex vel ramosa, collo vix squamato. Folia oblanceolata erecto-patentia non adpressa viridia utrinque sparse pilosa 9–20 cm. longa 2–5 cm. lata (raro 36 cm. longa 7 cm. lata) apice acuta vel obtusa basi in petiolum exalatum vel anguste alatum cuneata vel attenuata pinnatifida v. pinnatiloba, laciniis 4–5 jugis approximatis vel remotis, patentibus vel runcinatis, deltoideis vel elongato-triangularibus apice acutis vel acuminatis integris vel antice dentatis, interlobiis angustis vel latiusculis incisus vel dentatis, lobo terminali parvo depresso-rhomboideo vel deltoideo integro. Scapi plures sub anthesi foliis longiores aut breviores, sparse pilosi sub capitulo floccosi. Involucrum sub anthesi 13–15 mm. longum post anthesin 15–20 mm. longum, squamae exteriores erectae, interiorum longitudinis $\frac{2}{3}$ – $\frac{1}{2}$ attingentes, inferiores ovatae vel late ovatae 5–7 mm. longae 2–5 mm. latae apice acutae vel obtusiusculae raro breviter corniculatae saepissime ecorniculatae callosae, supra medium purpurascens margine indistincte albo-hyalinae sparse pilosae, superiores 5–8 mm. longae apice leviter acuminatae, squamae interiores lineari-lanceolatae apice truncatae ecorniculatae callosae nigro-purpurascens glabrae. Corolla flava marginalis 13–19 mm. longa 1.8–2 mm. lata, tubo 3.5–5 mm. longo ad faucem parce puberula vel glabra, ligula subtus stria lata nigrescente ornata. Antherae luteae. Stylus cum stigmatibus nigrovirescens. Achenia oblonga brunnea corpore 3–3.5 mm. longa 1 mm. lata multistriata superne spinuloso-tuberculata, ceterum obsolete tuberculata apice in pyramidem 0.5–1 mm. longam subabrupte abeuntia, rostro 8–11.5 mm. longo. Pappus sordide albescens 7–8 mm. longus.

Nom. jap. *Korai-tampopo* (KITAMURA 1933), *Asia-tampopo* (T. NAKAI 1932), *Manshutampopo* (T. NAKAI 1936).

Hab. in pratis vel in montibus. Fl. april.–jun. **Korea.** *Kanhoku*: Seisuiria (J. O.)—typus, Enjomen (S. HATSUSHIMA), Yujo (T. S.), Kamboho (T. S.), Rananjinsha (T. S.), Setsurei (J. O.). *Kannan*: Kanko (N. N.), Kosho (N. N.), Gekatsuguri (J. O.), Kishuji (N. N.), Seijori (N. N.). *Keiki*: mt. Shoyo (M. BOKU), Koryo (T. N. T.), Minrakuri (T. N. T.), Giseifu (T. N. T.), Suigen (T. SAKATA). *Heinan*: Yotoku (T. N. T.). *Zennan*: Rokodan (M. BOKU), mt. Chii (M. BOKU).

Distr. Manchuria.

This species may be *T. ussuriense* KOMAROV in Bull. Jard. Bot. Sc. URSS 1931, XXX (1932) p. 221.—KOMAROV et ALISOVA, Key Pl. Far. East. Reg. USSR II (1932) tab. 329. According to the original description of KOMAROV, *T. ussuriense* has tubular florets and less dissected leaves.

T. Ohwianum differs from *T. mongolicum* in the ovate scales usually less hairy at the margin and in the less tuberculated achenes, from *T. asiaticum* in the ovate outer scales and in the larger heads. The achenes of *T. Ohwianum* resemble those of *T. asiaticum*.

Taraxacum coreanum NAKAI, Fl. Sylv. Kor. XIV (1923) p. 123 nomen nudum, in Tokyo Bot. Mag. XLVI (1932) p. 62 cum descrip.—KITAMURA in Acta Phytotax. Geobot. IV (1935) p. 102. Pl. IV, fig. 7, 4; Pl. VII, fig. 12, 6.

- T. albidum* NAKAI (non DAHLST.) Fl. Sylv. Kor. XIV. (1923) p. 123.
T. officinale var. *platycarpum* (non DAHLST.) NAKAI, et *albiflorum* (non MAKINO) NAKAI, Fl. Kor. II (1911) p. 52.
T. glabrisquamum NAKAI ex H. KOIDZUMI in Tokyo Bot. Mag. L (1936) p. 87.
T. pseudo-albidum KITAGAWA in Tokyo Bot. Mag. XLVII (1933) p. 831.
T. Taquetii H. KOIDZUMI in Tokyo Bot. Mag. L (1936) p. 86 cum var. *pinnatipartito*.
T. peninsulae NAKAI ex H. KOIDZUMI in Tokyo Bot. Mag. XLVII (1933) p. 96.
T. mongolicum var. *coreanum* (NAKAI) KITAMURA nom. prov.

Radix elongata simplex interdum ramosa, collo parce fusco-squamato. Folia radicalia dilute viridia patentia oblanceolata 7–25 cm. longa 1.4–6 cm. lata utrinque sparse pilosa, apice obtusa mucronulata basi in petiolum brevem vel elongatum attenuata, margine saepe pinnatifida, laciniis 5–6 jugis saepe runcinatis deltoideis approximatis interdum lanceolatis remotis, apice acutis v. obtusis antice saepe denticulatis, lobo terminali parvo saepe rhomboideo raro hastato. Scapi plures sub anthesi foliis breviores vel ea aequantes post anthesin elongati sub capitulo dense floccosi. Involucrum dilute viride sub anthesi 15–18 mm. longum post anthesin 17–21 mm. longum, squamae exteriores erecto-patentes supra medium interdum recurvae, semper supra medium interiorum attingentes oblongo-lanceolatae vel lanceolatae apice plus minus corniculatae modeste pilosae purpurascentes margine subdistincte vel obsolete anguste albo-hyalinae interdum purpurascentes, dorso dilute viridescentes glabrae, squamae interiores lineari-lanceolatae apice nigro-purpurascentes parvicorniculatae v. eorniculatae glabrae. Corolla alba marginalis 15–17.5 mm. longa, tubo 3.5–5 mm. longo ad faucem glabro, ligula 1.5–2 mm. lata subtus stria lata nigrescente ornata. Antherae flavae. Stylus fusco-viridescens. Achenia olivaceo-brunnea obovato-oblonga, corpore 3.5 mm. longa 1.5 mm. lata facie multisulcata dense tuberculata superne muricato-tuberculata basi senism angustata apice in pyramidem 1 mm. longam subabrupte abeuntia, rostro 8–9 mm. longo. Pappus 7–8 mm. longus sordide albescens. Chromosomata $2n=32$ sec OKABE.

Nom. jap. *Keirin-shiro-tampopo* (NAKAI 1932), *Korai-tampopo* (T. NAKAI 1932), *Manshu-shiro-tampopo* (KITAGAWA 1933), *Chosen-shirobana-tampopo* (NAKAI 1933), *Keirin-tampopo* (NAKAI 1936), *Saishu-tampopo* (H. KOIDZUMI 1936).

Hab. in pratis, secus vias vulgaris. **Korea.** Fl. apr.–jun. *Kanhoku*: Kyonson (J. O.), Yujo (T. S.), Enjomen (S. HATSUSHIMA), Ranan (T. S.), Kakuseim (T. S.). *Kannan*: Genzan (S. KAWASAKI), Kishuji, Genzan (T. N. T.), Kanko (N. N.), Banriusan (N. N.). *Keiki*: Suigen (T. SAKATA), ibidem Gensendo (H. UEKI T.), Tokuson (M. BOKU), Keifukukiu (S. O. T.)—typus, Minrakuri (T. N. T.), Hoonji (M. BOKU), Seiryori (M. BOKU), mt. Shoyo (M. BOKU), Keijo (M. BOKU), Nanzando (T. U. T.)—typus *T. glabrisquamum*. *Kokai*: Hakusen (M. BOKU). *Zennan*: Kyobunto, Nishijima (T. N. T.)—typus *T. peninsulae*, mt. Chii (M. BOKU), Kyurei (M. BOKU), Hakuyozan (K. CHO), Dai-kokusanto (K. CHO). *Keinan*: Shinshu (H. YOKOYAMA), Chikuto (T. N. T.). Quelpaert in herbis Hoatien (E. T. n. 5731 T.)—typus *T. Taquetii*.

Distr. Manshuria.

f. **lutescens** (KITAGAWA) KITAMURA in Jap. Journ. Bot. XIII (1948) p. 501.

Taraxacum pseudoalbidum var. *lutescens* KITAGAWA in Tokyo Bot. Mag. XLVII (1933) p. 833.

Corolla alboflavescens.

Nom. jap. *Usuiro-tampopo* (KITAGAWA 1933).

Hab. **Korea.** *Keiki*: Bogetsusan (M. BOKU), mt. Shoyo (M. BOKU), Seiryori (M. BOKU). *Keinan*: Shinshiu (H. YOKOYAMA).

Distr. Manshuria.

Taraxacum coreanum is closely related to *T. mongolicum* sensu DAHLST., scarcely distinguished from the latter by the white corollas and by the outer involuclral scales not so hairy at the apex. The writer cultivated this species in the Botanical garden for many years. This species differs from *T. albidum* in the outer involuclral scales narrower and longer as compared with the inner ones, and in the flowering scapes as long as the leaves.

***Taraxacum mongolicum* HANDEL-MZT.**, Monogr. *Tarax.* (1907) p. 67 pro parte. —DAHLST. in Acta Horti Göth. XII (1926) p. 159, fig. 7, taf. II 12-17. —KITAGAWA in Tokyo Bot. Mag. XLVII (1933) p. 824, fig. 1 10-1. Pl. IV, fig. 6, 2; Pl. VI, fig. 11, 2.

T. liaotungense KITAGAWA, l. c. p. 825, fig. 2, fig. 10-2, 3.

T. kansuense NAKAI ex H. KOIDZUMI in Tokyo Bot. Mag. L (1936) p. 91.

T. quelpaertense KITAMURA in Acta Phytotax. Geobot. II (1933) p. 184.

Radix perpendicularis simplex apice 1-pluricephala, collo parce squamato. Folia exteriora patentia oblongo-oblancheolata vel oblancheolata sparsim araneopilosa, 5.5-15 cm. longa 1.2-5.5 cm. lata apice obtusa mucronulata basi in petiolum brevem attenuata margine profunde pinnatifida, laciniis lateralibus 4-5 jugis patentibus remotis oblongo-lanceolatis raro deltoideis apice acutis, interlobiis integris aut incis, lobo terminali hastato vel oblongo. Scapi plures sub anthesi foliis breviores primum dense araneosi demum glabrati, sub capitulo dense floccosi. Involuclrum sub anthesi 12 mm. longum post anthesin 15 mm. longum, laete viride, squamae exteriores adpressae lineari-lanceolatae raro oblongo-lanceolatae ad medium interiorum attingentes margine interdum laceratae, albo-pilosae, superne purpurascens apice parvicorniculatae vel eorniculatae dense floccosae, squamae interiores lineari-lanceolatae apice erosae nigropurpurascens parvicorniculatae vel eorniculatae pilosae. Corolla lutea 14-15 mm. longa 2-2.5 mm. lata, tubo 4.5 mm. longo apice glabro, ligula subtus stria lata nigrescente ornata. Antherae luteae. Stylus cum stigm. fusco-viridescens. Achenia olivaceo-brunnea supra medium breviter spinuloso-tuberculata apice in pyramidem 1 mm. longam basi spinulosam sensim abeuntia, rostro 6-8 mm. longo. Pappus 6 mm. longus.

Nom. jap. *Moko-tampopo* (T. NAKAI et H. KOIDZUMI 1933), *Ryoto-tampopo* (KITAGAWA 1933), *Ranshu-tampopo* (T. NAKAI 1936), *Saishu-tampopo* (KITAMURA 1933).

Hab. **Korea.** Fl. apr.-sept. *Heinan*: Heijo (S. K.). *Keinan*: Shisen, Riukun (H. YOKOYAMA). *Keiki*: Suigen (T. SAKATA). Quelpaert, Saishu (G. K.)—typus *T. quelpaertensis*.

Distr. Manshuria, China: *Hopei*, *Shantung*, *Shansi*, *Shensi*, *Kansu*, *Seichuan*, *Hupeh*, *Hunan*, *Kiangsu*, *Yunnan*.

***Taraxacum formosanum* KITAMURA** in Acta Phytotax. Geobot. II (1933) p. 48. —KITAGAWA in Tokyo Bot. Mag. XLVII (1933) p. 830, fig. 8, fig. 10-9. Pl. III, fig. 5, 1.

T. paraceratophorum NAKAI ex H. KOIDZUMI in Tokyo Bot. Mag. L (1936) p. 88.

T. Hondae NAKAI et H. KOIDZUMI in Tokyo Bot. Mag. L (1936) p. 143.

T. mongolicum HAND.-M.ZT., Monogr. *Tarax.* (1907) p. 67 pro parte.—DAHLST. in Acta Horti Göth. II (1926) p. 159 pro parte.

T. platycarpum (non DAHLST.) HAYATA, Ic. Pl. Formos. VIII (1919) p. 73.

T. mongolicum var. *formosanum* KITAMURA nom. prov.

Abs *T. mongolico* involucri squamis exterioribus angustioribus apice parce pilosis distinguendum.

Radix elongata saepe simplex apice 1–3 cephalis, collo parce squamato. Folia numerosa patentia oblanceolata vel oblanceolato-linearia 8–20 cm. longa 1–4 cm. lata apice obtusa mucronulata basi longe in petiolum alatum vel exalatum attenuata saepe pinnatifida, laciniis 4–5 jugis runcinatis deltoideis obtusis raro acutis, approximatis interdum laciniis oblongis remotis, lobo terminali deltoideo v. hastato, utrinque juniora pilosa seniora glabrata. Scapi plures sub anthesi foliis breviores vel ea aequantes, sub capitulo dense floccosi. Capitula 35–45 mm. lata in sicco. Involucrum sub anthesi 15–16 mm. longum post anthesin 16–19 mm. longum, squamae exteriores lineares vel lineari-lanceolatae supra medium interiorum attingentes 7–9 mm. longae 1.5–2 mm. latae e basi vel supra medium patentes apice corniculis 1–2 mm. longis praeditae parce pilosae purpurascens, margine anguste albo-hyalinae subglabrae vel parce pilosae, supra medium saepe purpurascens v. viridescens, squamae interiores lineari-lanceolatae superne interdum purpurascens apice truncatae nigrescentes corniculatae glabrae raro eorniculatae. Corolla lutea marginalis 17–21 mm. longa, tubo 5–7 mm. longo ad faucem plus minus puberulo, ligula 2–4 mm. lata, subtus stria lata nigrescente notata. Antherae luteae. Stylus pallide luteus. Achenia oblonga brunnea, corpore 3.5 mm. longa 1.2 mm. lata facie 3 sulcata costis lateralibus 2, mediis 3 subsulcatis, dense tuberculata apice muricata in pyramidem 0.8 mm. longam abeuntia basi sensim contracta, rostro 7–9 mm. longo. Pappus sordidus 6.5–7 mm. longus. Chromosomata $2n=16$ sec S. OKABE.

Nom. jap. *Takasago-tampopo* (KITAMURA 1933), *Makinoshima-tampopo* (T. NAKAI 1936), *Kara-tampopo* (T. NAKAI 1936).

Hab. **Formosa** in littoris maris vel in pratis, Fl. jan.–dec. *Taihoku*: Tamsui (S. K.)—typus, ibidem (T. T. et Y. S. n. 10964), ibidem (S. N.), Fukikaku (S. K.). *Shinchiku*: Korisho, Taisankyaku (Y. S. n. 4390 B.), Shinteku (T. MAKINO T.). **Liukiu**. Insula Okinawa Shuri (S. SAKAGUCHI). **Kiushiu**. Fl. mars.–aug. *Hizen*: Insula Fukue, Fukue (K. N.), Katsusa (S. TOYAMA), Kuchinotsu (S. T.). Insula Tsushima, Itsuhara (K. N.), Sago (S. T.). **Korea**. Fl. april.–mai. *Zennan*: Koshu (K. CHO). *Keinan*: Fusan, Makinoshima (T. N. T.)—typus *T. paraceratophori*.

Distr. China. *Kiangsu*, Kiating prope Shanghai (H. MIGO), Manshuria.

The pubescens on the tube of the corolla is variable.

Species mihi ignotae

1. *T. frigidum* H. KOIDZUMI in Journ. Jap. Bot. IX (1933) p. 468 non SCHUR.
2. *T. pseudoalbidum* H. KOIDZUMI, l. c. XII (1936) p. 627 non KITAGAWA 1933.
3. *T. hotakaense* H. KOIDZUMI, l. c. IX (1933) p. 363.
4. *T. Uianum* H. KOIDZUMI, l. c. XI (1935) p. 564.
5. *T. aristifolium* H. KOIDZUMI, l. c. XII (1936) p. 620.

Additions and Corrections

The manuscript of *Compositae Japonicae* pars 4, 5 and 6 was written in October, 1942 and presented to the Publishing Committee of the Memoire of the College of Science, Kyoto Imperial University on Third Nov. 1942 and was received.

During and after the World War, the publication of voluminous paper was impossible for many difficulties. Late Prof. G. KOIDZUMI, the teacher of the writer, was anxious about the complete publication of this work till his death in Dec. 1953.

The writer as a member of the Publishing Committee, endeavored to publish this, but it was impossible. He is very much thankful to the members of the Publishing Committee of the Memoire of the College of Science for publishing such voluminous article in spite of many difficulties.

Twenty years has passed since the publication of the first part of *Compositae Japonicae* in 1937. During that time, many Composit specimens were gathered from Manchuria, Mongolia, China, Nepal, Karakoram and Afghanistan. The writer studied these specimens and found some mistakes. He published *Supplementa et Emendanda ad Compositas Japonicas I* in *Acta Phytotax. Geobot.* XII (1943) pp. 99-106.

Several authors published new conceptions and new names.

To bring this *Compositae Japonicae** up to date, additions and corrections are necessary for part 1, 2 and 3.

The writer issued the line drawings of *Saussureae* in NAKAI's *Iconographia Plantarum Asiae Orientalis* Vol. V, no. 1. (Special number for *Saussureae*) in 1950. For the Japanese common Composit plants, the writer offered to the amateur botanists, 227 coloured illustrations of the *Compositae* in "Coloured Illustrations of Herbaceous Plants of Japan (*Sympetalae*)" published recently from HOIKUSHA.

These figures may serve as supplement.

Cynareae

Vol. XIII, p. 19. *Atractylodes koreana* (NAKAI) KITAMURA should be treated as *Atractylodes lancea* DC. var. ***simplicifolia*** (LOESNER) KITAMURA in *Journ. Jap. Bot.* XX (1944) p. 195. Syn. *A. ovata* var. *simplicifolia* LOESN. in ENGLER, *Bot. Jarb. Beibl.* LXXV (1904) p. 74. Distr. Korea, Manchuria, China bor.

Add *Atractylodes lyrata* SIEB. et ZUCC. var. *delicatula* NAKAI f. *latifolia* NAKAI et f. *angustifolia* NAKAI in *Bull. Nat. Sci. Mus.* No. 33 (1953) p. 24 as syn. under

***Atractylodes japonica*.**

* *Compositae Japonicae* Pars Prima in *Mem. Coll. Science Kyoto Imp. Univ. Series B.* Vol. XIII (1937) pp. 1-421. *Compositae Japonicae* Pars Secunda, l. c. Vol. XV, No. 3 (1940) pp. 285-446. *Compositae Japonicae* Pars Tertia, l. c. Vol. XVI No. 3 (1942) pp. 155-292. *Compositae Japonicae* Pars Quarta in *Mem. Coll. Sci. Univ. Kyoto Series B.* Vol. XXII No. 1 (1955) pp. 77-126. *Compositae Japonicae* Pars Quinta, l. c. Vol. XXIII No. 1 (1956) pp. 105-168.

Vol. XIII, p. 24. *Synurus pungens* (FR. et SAV.) KITAMURA. Syn. *S. humilis* HONDA in Tokyo Bot. Mag. LV (1941) p. 441. This species was found in Prov. Kiangsi, China. cf. KITAMURA in Journ. Jap. Bot. XXI (1947) p. 56.

Vol. XIII, p. 28. *Serratula insularis* ILJIN should be treated as *S. coronata* L. subsp. *insularis* (ILJIN) KITAMURA in Acta Phytotax. Geobot. XII (1943) p. 105.

f. *albiflora* (KITAMURA) KITAMURA l.c. p. 105.

var. *koreana* (ILJIN) KITAMURA comb. nov. Syn. *S. insularis* var. *koreana* (ILJIN) KITAMURA, *Comp. Jap.* I p. 29.

Vol. XIII, p. 40. *Cirsium* Sect. *Onotrophe* DC. should be treated as *Cirsium* Sect. *Apalocentron* (CASS.) KITAMURA in Acta Phytotax. Geobot. XII (1942) p. 102. Syn. *Onotrophe* Sect. *Apalocentron* CASS. in Dict. Sc. Nat. 36 (1825) p. 146. *Cirsium* Sect. *Chamaeleon* DC. in DUBY, Bot. Gall. (1828).

Vol. XIII, p. 44. Add. *Cirsium kamtschaticum* LEDEB. var. *boreale* (KITAM.) TATEWAKI in Trans. Nat. Hist. Soc. Sapporo XVI (1940) p. 111. Syn. *C. boreale* KITAMURA, *Cirs. Nov. Orient. Asiat.* (1931) p. 2.

The writer treated in *Comp. Jap.* I p. 42, *C. boreale* as a syn. of *C. kamtschaticum*. Var. *boreale* is a geographically distinct race confined to the western Hokkaido, with small heads and dentate leaves.

Cirsium pectinellum A. GRAY should be treated as *C. kamtschaticum* subsp. *pectinellum* (A. GRAY) KITAMURA, *Comp. Jap.* I p. 42 pro syn.

var. *alpinum* (KOIDZUMI) KITAMURA comb. nov. Syn. *C. pectinellum* var. *alpinum* KOIDZUMI ex KITAMURA, *Comp. Jap.* I p. 45.

Subsp. *pectinellum* is a stenophyllous race adapted to humid place.

Vol. XIII, p. 45. *Cirsium apoense* NAKAI should be treated as *C. kamtschaticum* subsp. *apoense* (NAKAI) KITAMURA in Acta Phytotax. Geobot. XV (1956) p. 143.

Vol. XIII, p. 50. *Cirsium austrokiushianum* KITAMURA should be treated as *C. Sieboldi* subsp. *austrokiushianum* KITAMURA, *Comp. Jap.* I p. 50 pro syn.

Vol. XIII, p. 54. *Cirsium lucens* KITAMURA was found in Katsurakawa, Prov. *Ohmi* by S. NAGAI. This is the easternmost locality of this species.

Vol. XIII, p. 56. *Cirsium spinosum* KITAMURA is a very robust plant with large shining leaves often having white maculations, and is a characteristic dominant on the seashore of the southernmost Kiushiu.

Vol. XIII, p. 62. *Cirsium Maackii* DC. should be corrected as *C. japonicum* var. *usuriense* (REGEL) KITAMURA in Journ. Jap. Bot. XX (1944) p. 198. Accordingly, *C. japonicum* var. *Nakaianum* KITAMURA. Syn. *C. Maackii* var. *Nakaianum* NAKAI. *C. Maackii* var. *spinosissimum* KITAMURA should be corrected as *C. japonicum* var. *spinosissimum* KITAMURA in Journ. Jap. Bot. XX (1944) p. 198.

Vol. XIII, p. 64. Add. *Cirsium kitagoense* NAKAI in Journ. Jap. Bot. XXV (1950) p. 134 as a syn. under *C. japonicum* DC.

Add. *Cirsium Zenii* NAKAI in Journ. Jap. Bot. XVI (1940) p. 71. Hab. Korea. Prov. *Kogen*: Tenpozan.

Vol. XIII, p. 68. *Cirsium aomorense* NAKAI should be read as *C. Tanakae* MATSUM. subsp. *aomorense* KITAMURA, *Comp. Jap.* I p. 68 pro syn. Accordingly, *C. Tanakae*

subsp. **aomorense** f. **echinoides** (KITAMURA) KITAMURA comb. nov. Syn. *C. aomorense* f. *echinoides* KITAMURA, *Cirs.* Nov. Orientali-Asiat. (1931) p. 10.

f. **leucanthum** KITAMURA nom. nov. Syn. *C. aomorense* var. *albiflorum* KITAMURA, l. c. (1931) p. 10.

f. **yezoanum** (NAKAI) KITAMURA comb. nov. Syn. *C. yezoense* NAKAI in Tokyo Bot. Mag. XXVI (1912) p. 376.

Vol. XIII, p. 70. *Cirsium nikkoense* NAKAI should be read as **Cirsium Tanakae** subsp. **nikkoense** (NAKAI) KITAMURA, *Comp. Jap.* I p. 70 pro syn. Accordingly,

var. **niveum** (KITAMURA) KITAMURA comb. nov. Syn. *C. nikkoense* var. *niveum* KITAMURA, *Cirs.* Nov. Orient.-Asiat. (1931) p. 18.

Vol. XIII, p. 76. Add. *Cirsium fusenense* NAKAI in Journ. Jap. Bot. XVI (1940) p. 70 as a synonym under **C. shantarense**.

Vol. XIII, p. 79. As there is *Cirsium* Sect. *Odontolepis* BOISS. ex DC., Prodr. VII (1938) p. 304, *Cirsium* Subsect. *Odontolepis* KITAMURA in Acta Phytotax. Geobot. III (1934) p. 6 can not be used. So *Cirsium* Sect. **Apalocentron** Subsect. **Magofukui** is newly proposed for the name of the latter.

Vol. XIII, p. 86. *Cirsium chinense* sensu KITAMURA should be corrected as follows.

Cirsium lineare var. **laushanense** KITAMURA in Acta Phytotax. Geobot. X (1941) p. 17, in Journ. Jap. Bot. XX (1944) p. 199. Syn. *Cirsium chinense* var. *laushanense* (YABE) KITAMURA, *Cirs.* Nov. Orient.-Asiat. (1931) p. 4, *Comp. Jap.* I p. 87.—*Cirsium oreithales* var. *laushanense* KITAGAWA in Journ. Jap. Bot. XV (1950) p. 42.

f. **vestitum** KITAMURA in Journ. Jap. Bot. XX (1944) p. 199. Syn. *Cirsium chinense* HAYATA, Mater. Fl. Formos. (1911) p. 158.—KITAMURA, *Comp. Jap.* I p. 86. Syn. *C. oreithales* HANCE. *Cn. sinensis* CLARKE. *Cn. univervius* LÉV. et VANT. *C. lineare* var. *spathulatum* PETRAK.

Cirsium chinense GARD.& CHAMP. in HOOKER, Kew Journ. I (1849) is treated as a syn. of **Cirsium lineare** var. **Franchetii** f. **pallidum** KITAMURA in Journ. Jap. Bot. XX (1944) p. 199.

Vol. XIII, p. 94. **Cirsium Buergeri** MIQUEL was found on mt. Takaboko, Prov. Awa, Shikoku by T. INOBE.

Vol. XIII, p. 97. **Cirsium Gyojanum** KITAMURA was found on mt. Ishidate, Prov. Awa, Shikoku by the writer.

Vol. XIII, p. 99. Add **Cirsium Furusei** KITAMURA in Acta Phytotax. Geobot. XIV (1952) p. 147. Hab. **Hondo**. Prov. **Shinano**: mt. Kisokoma. Abs. *C. kagamontano* foliis subtus niveo-tomentosis, squamis involucris spinuloso-dentatis distinguendum. Vol. XIII, p. 109. *Cirsium comosum* (FR. et SAV.) MATSUM. should be read as **C. nipponicum** var. **comosum** (FR. et SAV.) KITAMURA, *Comp. Jap.* I p. 109 pro syn.

Cirsium nipponicum var. **incomptum** (MAXIM.) KITAMURA comb. nov. Syn. *Cnicus suffultus* var. *incomptus* MAXIM. in Bull. l'Acad. Impér. Sci. Pétersb. XIX (1874) p. 499. *C. comosum* var. *incomptum* (MAXIM.) KITAMURA, *Comp. Jap.* I, p. 110.

var. **Sawadae** KITAMURA, *Comp. Jap.* I, p. 111 pro syn.

var. **yatsugatakense** (NAKAI) KITAMURA, l. c. pro syn.

var. **indefensum** (KITAMURA) KITAMURA stat. nov. Syn. *C. indefensum* KITAMURA in Acta Phytotax. Geobot. II (1933) p. 400, *Comp. Jap.* I, p. 119.

var. **Yoshinoi** (NAKAI) KITAMURA, *Comp. Jap.* I p. 114 pro syn.

var. **amplifolium** KITAMURA comb. nov. Syn. *C. Yoshinoi* var. *amplifolium* KITAMURA, *Comp. Nov. Jap.* I (1931) p. 17, *Comp. Jap.* I p. 116.

var. **shikokianum** KITAMURA comb. nov. Syn. *C. Yoshinoi* var. *shikokianum* KITAMURA, *Comp. Nov. Jap.* I (1931) p. 17, *Comp. Jap.* I p. 116.

var. **tristissimum** KITAMURA comb. nov. Syn. *C. Yoshinoi* var. *tristissimum* KITAMURA, *Comp. Jap.* I p. 116.

Vol. XIII, p. 132. **Cirsium Okamotoi** KITAMURA is not a hybrid, but an independent species related to *C. nipponense*. cf. HARA in Tokyo Bot. Mag. LXIV (1951) p. 78.

Vol. XIII, p. 138. *Hemistepta carthamoides* (BUCH.-HAMILT.) O. KUNTZE should be corrected as **Hemistepta lyrata** BUNGE-HARA in Journ. Jap. Bot. XIV (1938) p. 337. *Serratula carthamoides* BUCH.-HAMILTON ex ROXB., Hort. Beng. (1814) p. 60 nom. nud., Fl. Ind. ed. 2 III (1832) p. 407 non POIRET 1804.

Vol. XIII, p. 146. *Serratula amara* (non L.) PALLAS, *Saussurea amara* var. *integra* DC., *S. macrocephala* LESS., *S. amara* (non DC.) LESS. and *S. scabra* LESS. are the synonyma of **Saussurea glomerata** POIRET. These should be excluded from the synonyma of *S. japonica* DC.

Vol. XIII, p. 147. Add *Saussurea peipingensis* CHEN in Bull. Fan Mem. Inst. Biol. V (1934) p. 87.—KITAGAWA in Iconogr. Pl. Asiae Orientalis Vol. I, no 4 (1936) tab. XXXVI p. 119, as a syn. under **Saussurea chinampoensis**. The latter is also distributed in Manchuria and North China.

Vol. XIII, p. 149. **Saussurea chionophylla** TAKADA is a serpentine relic.

Vol. XIII, p. 155. *Saussurea Muramatsui* KITAMURA should be treated as **S. nipponica** subsp. **Muramatsui** KITAMURA in Iconogr. Pl. Asiae Orientalis Vol. V, no. 1 (1950) p. 472. Add. **Saussurea nipponica** subsp. **hokurokuensis** KITAMURA, l. c. (1950) tab. CXLVI p. 471. Syn. *S. Muramatsui* KITAMURA, *Comp. Jap.* I, p. 155 pro parte. Hab. **Hondo**. Provs. **Noto**, **Yechigo**, Insula **Sado**.

Vol. XIII, p. 166. Add **Saussurea inaensis** KITAMURA in Acta Phytotax. Geobot. IX (1940) p. 242, Iconogr. Pl. Asiae-Orientalis Vol. V, no. 1 (1950) tab. CXXXVIII p. 452. **Hondo**. Prov. **Shinano**: Ojikamura. This is a very rare plant only found in serpentine areas.

Vol. XIII, p. 170. *Saussurea Kudoana* TATEWAKI et KITAMURA should be treated as **S. Riederii** subsp. **Kudoana** KITAMURA, *Comp. Jap.* I p. 170 pro syn. This is a serpentinomorphose (nanism and crassifolium).

Vol. XIII, p. 172. Add **Saussurea Riederii** subsp. **yezoensis** f. **albiflora** (KOIDZUMI) HARA, Enum. *Sperm.* Jap. II (1952) p. 248. Nom. jap. *Shirobana-kitaazami*. syn. *S. Riederii* var. *albiflora* KOIDZ. in Tokyo Bot. Mag. XXXI (1917) p. 34. Hab. Hokkaido.

Vol. XIII, p. 182. *Saussurea stenolepis* NAKAI should be treated as **S. sinuata** KOMAROV in Acta Horti Petrop. XXV (1907) p. 735 tab. XIV.—KITAMURA in Acta Phytotax. Geobot. XII (1943) p. 105.

Vol. XIII, p. 193. **Saussurea amabilis** was found also on limestone in mt. Ishidate,

Prov. Awa, Shikoku.

Vol. XIII, p. 203. *Saussurea nutans* NAKAI should be treated as a syn. of **S. Tanakae** FR. et SAV.—KITAMURA, *Comp. Jap.* I p. 203, in *Iconogr. Pl. As.* V, no. 1 (1950) tab. CXLIV p. 465.

Inuleae

Vol. XIII, p. 215. *Gnaphalium formosanum* HAYATA should be corrected as **Gnaphalium adnatum** WALL. ex DC., *Prodr.* VI (1938) p. 274.—KITAMURA in *Journ. Jap. Bot.* XXI (1947) p. 57.

Vol. XIII, p. 216. *Gnaphalium multiceps* WALL. should be corrected as **G. affine** DON, *Prodr. Fl. Nep.* (1825) p. 173.—*Gnaphalium luteo-album* subsp. *affine* KOSTER in *Blumea* IV (1941) p. 484.

Gnaphalium affine is the vicarious species of *G. luteo-album*, the former extending from Japan to Hiamalayas and the latter from Hindukush to Europe.

Vol. XIII, p. 230. *Leontopodium japonicum* var. *spathulatum* MURATA in *Acta Phytotax. Geobot.* XVI (1956) p. 100.—*Leontopodium japonicum* f. *spathulatum* OHWI, *Fl. Jap.* 1135 (1953). The writer still considers *L. spathulatum* specifically different from *L. japonicum*.

Vol. XIII, p. 229. Add *Leontopodium japonicum* var. **angustifolium** HONDA in *Tokyo Bot. Mag.* LI (1937) p. 857. Nom. jap. *Hosoba-usuyukiso*. Hab. **Hondo**. Prov. *Shinano*.

Vol. XIII, p. 232. Add *Leontopodium hayachinense* (TAKEDA) HARA et KITAMURA var. **Miyabeaenum** S. WATANABE in *Acta Phytotax. Geobot.* XVI (1956) p. 128. Hab. **Hokkaido**. Prov. *Shiribeshi*: mt. Ohira.

L. hayachinense is a serpentinorelic.

Vol. XIII, p. 234. *Leontopodium Fauriei* var. *angustifolium* HARA et KITAMURA is a serpentinomorphose (stenophyllism).

Vol. XIII, p. 237. *Anaphalis Nagasawai* HAYATA should be corrected as **Anaphalis nepalensis** (SPRENG.) HAND.-MAZT., *Symb. Sin.* (1936) p. 1099.—KITAMURA in *Fauna and Flora of Nepal Himalaya* (1955) p. 245. Syn. *A. nubigea* DC. *A. monocephala* DC. Distr. Hindukush, Himalaya, China, Formosa.

Vol. XIII, p. 239. *Anaphalis pterocaulon* (FR. et SAV.) MAXIM. should be corrected as **Anaphalis sinica** HANCE in *Journ. Bot.* XII (1874) p. 261.—KITAMURA in *Acta Phytotax. Geobot.* XII (1943) p. 99. Syn. *A. pterocaulon* MAXIM. *A. Chanetii* LÉV. *A. possietica* KOM. *A. Bodinieri* FRANCHET.

A. sinica var. **viscosissima** (HONDA) KITAMURA, l. c. (1943) p. 100. Syn. *A. pterocaulon* var. *viscosissima* KITAMURA, *Comp. Jap.* I p. 240. *A. viscosissima* var. *subnuda* HONDA in *Tokyo Bot. Mag.* LV (1941) p. 440.

A. sinica subsp. **Morii** (NAKAI) KITAMURA, l. c. (1943) p. 100. Syn. *A. pterocaulon* subsp. *Morii* (NAKAI) KITAMURA in *Acta Phytotax. Geobot.* V (1936) p. 149, *Comp. Jap.* I p. 240.

Vol. XIII, p. 241. *Anaphalis contorta* (non HOOKER f.) KITAMURA should be corrected as *Anaphalis margaritacea* subsp. *morrisonicola* (HAYATA) KITAMURA in Fauna and Flora of Nepal Himalaya (1955) p. 244. Distr. Phillipines, Formosa.

Anaphalis contorta (syn. *Antennaria contorta* DON. *Anaphalis tenella* DC. *Gnaphalium contortum* HAM. *Anaphalis Falconeri* CLARKE) is easily distinguished from *A. margaritacea* by the small heads and the auriculed leaves, and is distributed from Hindukush, Himalayas to Western China.

Vol. XIII, p. 243. Add *Anaphalis margaritacea* var. *angustior* f. *ramosa* et var. *intercedens* HARA, Enum. *Sperm.* Jap. II (1952) p. 111 as syn. under *Anaphalis margaritacea* subsp. *angustior*.

Vol. XIII, p. 246. *Anaphalis horaimontata* MASAMUNE. Caulis simplex erectus 10 cm. altus dense floccosus basi 1mm. diametro, dense foliatus apice corymbosim ramosus, ramis ascendentibus. Folia radicalia rosulata parva obovata sub anthesi subemarcida sed persistentia utrinque dense cinereo-floccosa. Folia caulina media utrinque dense cinereo-floccosa, spatulata 12-14 mm. longa 3-3.5 mm. lata apice obtusa basi sensim angustata subvaginata. Folia suprema 5-6 mm. longa linearia. Capitula 6 corymbosim disposita pedunculata. Involucrum campanulato-globosum basi rotundatum dense floccosum 6 mm. longum et latum, squamae imbricatae 6-seriales, exteriores fusco-brunnescentes, ovato-lanceolatae vel ovatae apice acutiusculae vel obtusae, interiores albae apice obtusae. Flores radii foeminei numerosi, corolla filiformis 3.5 mm. longa. Flores hermaphroditi pauci, corolla tubulosa 3.5 mm. longa apice 5-fida. Pappi fl. foem., setis 3.7 mm. longis albis basi liberis apice aequilatis. Pappi fl. masc. setis 3.7 mm. longis apice scabris sed non clavellatis. Ovarium minute puberulum.

Hab. **Formosa**. in herbidis alpinis. Prov. *Taichu*: Daisuikuntug (1 aug. 1918 T. SUZUKI n. 13504).

Vol. XIII, p. 252. According to KERR, Fl. Siam. II (1936) p. 261, *Blumea pubigera* MERRILL should be treated as *B. riparia* DC., Prodr. V (1936) p. 444. Syn. *Conyza riparia* Bl., Bijdr. (1826) p. 899. Syn. *B. chinensis* DC. *BiLeveilleia chinensis* VANIOT in Bull. Acad. Géogr. Bot. XIII (1904) p. 326. *B. riparia* VANIOT, l. c. non *Conyza chinensis* L. nec *Conyza pubigera* L.

Vol. XIII, p. 259. Add *Blumea intermedia* KOSTER in Blumea IV (1941) p. 486 as a syn. under *B. oblongifolia* KITAM. A hybrid between *B. lacera* and *B. riparia*.

Vol. XIII, p. 263. Add *Inula japonica* var. *sublanata* (non KOMAROV) NAKAI in Bull. Nat. Sci. Mus. No. 33 (1953) p. 24, and *Inula Yosezatoana* MAKINO, Illust. Fl. Jap. Supplement (1955) p. 1096, fig. 3275 nom. nud. Nom. jap. *Sakura-oguruma* as syn. under *Inula britannica* subsp. *japonica*. Add subsp. *japonica* f. *antiplena* (HONDA) HARA, Enum. *Sperm.* Jap. II (1952) p. 212. Syn. subsp. *japonica* var. *antiplena* HONDA, Nom. Pl. Jap. (1939) p. 508. Nom. jap. *Maruzaki-oguruma*. Hab. **Hondo**.

Vol. XIII, p. 276. *Carpesium Matsuei* TATEWAKI et KITAMURA should be treated as *Carpesium divaricatum* var. *Matsuei* (TATEW. et KITAM.) KITAMURA comb. nov. Syn. *C. Koidzumii* MAKINO var. *Matsuei* (TATEW. et KITAM.) HARA Enum. *Sperm.* Jap. II (1952) p. 155.

Vol. XIII, p. 278. *Carpesium acutum* HAYATA should be corrected as **Carpesium nepalense** LESS. in Linnaea VI (1831) p. 234.—KITAMURA in Fauna and Flora of Nepal Himalaya (1955) p. 250. Distr. From Formosa to Nepal.

Eupatorieae

Species	Chromosome number		Investigator References
	Numbers		
	Gametic	Somatic	
<i>Eupatorium</i>			
<i>E. Lindleyanum</i>		20	HUZIWARA (1).
<i>E. variabile</i>		20	HUZIWARA (1).
<i>E. Fortunei</i>		20	HUZIWARA (1).
<i>E. chinense</i>			
var. <i>simplicifolium</i>		30, 31, 40, 50	HUZIWARA (1).
var. <i>angustatum</i>		30	HUZIWARA (1).
var. <i>dissectum</i>		20	HUZIWARA (1).
subsp. <i>sachalinense</i>			
var. <i>hakonense</i>		20	HUZIWARA (1).

- (1) HUZIWARA in Cytologia 21, 1956. The materials were determined by the writer (S. KITAMURA).

Eupatorium Lindleyanum is most widely distributed in Eastern Asia. Its somatic chromosome number is 20. *E. cannabinifolium* of Europe has also 20 chromosomes. Among living Eurasiatic *Eupatoria*, *E. Lindleyanum* seems to be the ancestral form from morphological, geographical and cytological observations.

Vol. XIII, p. 284. *Eupatorium japonicum* THUNB. should be corrected as **Eupatorium chinense** L., Sp. Pl. (1753) p. 837.—MERRILL in Sinensia I (1931) p. 31. Syn. *E. Revesii* WALL. ex DC., Prodr. V (1936) p. 179.

var. **simplicifolium** (MAKINO) KITAMURA in Journ. Jap. Bot. XXIV (1949) p. 79. Syn. *E. japonicum* var. *simplicifolium* MAKINO in Tokyo Bot. Mag. 23 (1909) p. 142.

f. **fragrans** (HONDA) HARA, Enum. *Sperm.* Jap. II (1952) p. 201. Syn. *E. japonicum* var. *fragrans* HONDA in Tokyo Bot. Mag. LIX (1940) p. 14. Hab. Japonia.

var. **eglandulosum** (HONDA) KITAMURA comb. nov. Syn. *E. japonicum* var. *eglandulosum* KITAMURA, *Comp.* Jap. I p. 286. *E. chinense* var. *simplicifolium* f. *eglandulosum* (HONDA) HARA, Enum. *Sp.* Jap. II (1952) p. 201.

var. **tripartitum** (MAKINO) KITAMURA comb. nov. Syn. *E. japonicum* var. *tripartitum* MAKINO in Tokyo Bot. Mag. XXIII (1909) p. 142.—KITAMURA, *Comp.* Jap. I p. 285, in Journ. Jap. Bot. XXI (1947) p. 51. *E. chinense* var. *simplicifolium* f. *tripartitum* HARA, l. c. (1952) p. 201. Var. *tripartitum* was found in Prov. Anwei, China.

var. **tozanense** (HAYATA) KITAMURA comb. nov. Syn. *E. japonicum* var.

tozanense KITAMURA, *Comp. Jap.* I p 286. *E. tozanense* HAYATA, Ic. Pl. Formos. VIII (1919) p. 44.

var. **angustatum** (MAKINO) HARA, Enum. *Sp. Jap.* II (1952) p. 200. Syn. *E. laciniatum* KITAMURA in Acta Phytotax. Geobot. V (1936) p. 245, *Comp. Jap.* I p. 289. *E. japonicum* var. *angustatum* (MAKINO) KITAMURA in Acta Phytotax. Geobot. XII (1943) p. 102.

var. **dissectum** (MAKINO) HARA, l. c. (1952) p. 200. Syn. *E. laciniatum* var. *dissectum* (MAKINO) KITAMURA in Acta Phytotax. Geobot. V (1936) p. 245, *Comp. Jap.* 1 p. 289.

Vol. XIII, p. 286. *Eupatorium stoecadosmum* HANCE should be corrected as **E. Fortunei** TURCZ. in Bull. Soc. Imp. Nat. Mosc. XXIV (1851) p. 150.—HAND.-MAZT. in Not. Bot. Gart. Berl.-Dahlem 13 (1937) p. 608.—KITAMURA in Journ. Jap. Bot. XXIV (1949) p. 77.

Vol. XIII, p. 287. **Eupatorium Lindleyanum** var. **Yasushii** TUYAMA in Journ. Jap. Bot. XXXI (1955) p. 28. Hab. **Hondo**. Prov. *Idzu* : Insula Miyake. Nom. jap. *Hamasawahiyodori*.

Vol. XIII, p. 290. *Eupatorium sachalinense* MAKINO should be corrected as **E. chinense** subsp. **sachalinense** (Fr. SCHMIDT) KITAMURA comb. nov. Syn. *E. japonicum* subsp. *sachalinense* (Fr. SCHMIDT) KITAMURA in Acta Phytotax. Geobot. XII (1943) p. 103. *E. Glehni* Fr. SCHMIDT ex TRAUTV. in Acta Horti Petrop. VII (1883) p. 432.—HARA, Enum. *Sperm. Jap.* II (1935) p. 202. *E. japonicum* var. *sachalinense* Fr. SCHMIDT. Recently Subsp. *sachalinense* was found on mt. Hyonosen, Prov. *Tajima*, Hondo.

Vol. XIII, p. 291. *Eupatorium hakonense* NAKAI should be corrected as **E. chinense** subsp. **sachalinense** var. **hakonense** (NAKAI) KITAMURA comb. nov. Syn. *E. Glehni* var. *hakonense* (NAKAI) HARA, l. c. (1952) p. 202.

Vol. XIII, p. 294. In the key for *Eupatorium*, *E. amabile* was neglected. This species is distinguished from the other species by the heads containing 9–15 florets. The heads of other species usually contain 5 florets.

Vol. XIII, p. 295. *Eupatorium formosanum* HAYATA was found in Prov. *Anwei*, China. cf. KITAMURA in Journ. Jap. Bot. XXIV (1949) p. 80.

Astereae

Species	Chromosome number		Investigator References
	Numbers		
	Gametic	Somatic	
Aster			
<i>ageratoides</i>			
subsp. <i>leiophyllus</i>	18	18, 36, 38, 54	TAHARA et SHIMOTOMAI (1), SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (8).
var. <i>Sawadanus</i>		36	HUIZIWARA (8).
subsp. <i>amplexifolius</i>		18	SHIMOTOMAI et HUIZIWARA (2).
subsp. <i>microcephalus</i>		36	SHIMOTOMAI et HUIZIWARA (2).

Species	Numbers		Investigator References
	Gametic	Somatic	
subsp. <i>ovatus</i>	18	36	TAHARA et SHIMOTOMAI (1), SHIMOTOMAI et HUIZIWARA (2).
var. <i>yezoensis</i>		36	HUIZIWARA (11).
var. <i>littoricola</i>		36	HUIZIWARA (8).
var. <i>hortensis</i>		36	SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (8).
var. <i>humilis</i>	18	36	SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (8).
subsp. <i>ripensis</i>	18	36	SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (7).
subsp. <i>angustifolius</i>		36	HUIZIWARA (10).
subsp. <i>tubulosus</i>		36	HUIZIWARA (7).
subsp. <i>Sugimotoi</i>		36	SHIMOTOMAI et HUIZIWARA (2).
<i>tenuipes</i>		18	HUIZIWARA (9).
<i>viscidulus</i>	9	18	TAHARA et SHIMOTOMAI (1), HUIZIWARA (9).
<i>fastigiatus</i>	9	18	TAHARA et SHIMOTOMAI (1), HUIZIWARA (9).
<i>tataricus</i>	27	54	TAHARA et SHIMOTOMAI (1), SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (9).
var. <i>Fauriei</i>		54	SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (9), (11).
<i>Glehni</i>		18	HUIZIWARA (9), (11).
var. <i>hondoensis</i>	9	18	TAHARA et SHIMOTOMAI (1), SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (9).
<i>dimorphophyllus</i>		18	HUIZIWARA (9).
<i>Maackii</i>		18	HUIZIWARA (9).
<i>scaber</i>	9	18	TAHARA et SHIMOTOMAI (1), SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (9).
<i>rugulosus</i>	9	18	SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (9).
<i>Sekimotoi</i>		18	SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (9).
<i>komonoensis</i>		18	SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (9).
<i>altaicus</i>	18		SHIMOTOMAI et HUIZIWARA (2).
<i>Asa-Grayi</i>		18	SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (9).
<i>Pseudo-Asa-Grayi</i>		18	SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (9), (10).
<i>spathulifolius</i>	9	18	SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (9), (10).
<i>Miyagii</i>		18	SHIMOTOMAI et HUIZIWARA (2).
<i>Tripolium</i>	9	18	TAHARA et SHIMOTOMAI (1), SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (9), (10).
<i>dubius</i>		18	HUIZIWARA (9).
subsp. <i>glabratus</i>	9, 18	18	MATSUURA et SUTO (12), SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (9), (10).
var. <i>angustifolius</i>		18	HUIZIWARA (9), (11).
<i>Kalimeris</i>			
<i>indica</i>		54	SHIMOTOMAI et HUIZIWARA (2), HUIZIWARA (5).

Species	Numbers		Investigator References
	Gametic	Somatic	
<i>pinnatifida</i>	9	18	TAHARA et SHIMOTOMAI (1), SHIMOTOMAI et HUIWARA (2), HUIWARA (5).
<i>Yomena</i>		63, 64	SHIMOTOMAI et HUIWARA (2), HUIWARA (5).
<i>Pseudo-yomena</i>		63, 64, 66	SHIMOTOMAI et HUIWARA (2).
<i>incisa</i>		72	SHIMOTOMAI et HUIWARA (2).
<i>Miqueliana</i>	9	18	SHIMOTOMAI et HUIWARA (2), HUIWARA (5).
<i>Gymnaster</i>			
<i>Savatieri</i>	9	18, 27, 36	TAHARA et SHIMOTOMAI (1), SHIMOTOMAI et HUIWARA (2), HUIWARA (4).
subsp. <i>pygmaeus</i>		18	SHIMOTOMAI et HUIWARA (2), HUIWARA (4).
<i>koraiensis</i>		144	SHIMOTOMAI et HUIWARA (2), HUIWARA (4).
<i>Heteropappus</i>			
<i>hispidus</i>	18	36	SHIMOTOMAI et HUIWARA (2).
subsp. <i>arenarius</i>	18	36	SHIMOTOMAI et HUIWARA (2).
subsp. <i>leptocladus</i>	18		SHIMOTOMAI et HUIWARA (2).
<i>Erigeron</i>			
<i>canadensis</i>		18	HUIWARA (6).
<i>annuus</i>		27	HUIWARA (6).
<i>bonariensis</i>		54	HUIWARA (6).
<i>sumatrensis</i>		54	HUIWARA (6).
<i>Callistephus</i>			
<i>chinensis</i>	9	18	TAHARA et SHIMOTOMAI (1), HUIWARA (3).
<i>Solidago</i>			
<i>Virga-aurea</i>			
subsp. <i>asiatica</i>		18	HUIWARA (3).
subsp. <i>leiocarpa</i>		18	MATSUURA et SUTO (12).

(1) TAHARA et SHIMOTOMAI in Tokyo Bot. Mag. 40, 1926.

(2) SHIMOTOMAI et HUIWARA in Cytologia 12, 1942.

(3) HUIWARA in Senshokutai 21, 1954.

(4) HUIWARA in Jap. Journ. Genetics 29, 1954.

(5) HUIWARA in Jap. Journ. Genetics 30, 1955.

(6) HUIWARA in Senshokutai 25-26, 1955.

(7) HUIWARA in Tokyo Bot. Mag. 68, 1955.

(8) HUIWARA in Tokyo Bot. Mag. 69, 1956.

(9) HUIWARA in Cytologia 22, 1957.

(10) HUIWARA in Tokyo Bot. Mag. 67, 1954.

(11) HUIWARA in Tokyo Bot. Mag. 70, 1957.

(12) MATSUURA et SUTO in Journ. Fac. Sci. Hokkaido Imp. Univ. ser. V, VI, 1935.

Generally speaking, diploid species ($2n=18$) are old and clearly defined morphologically, such as *Aster Glehni*, *A. dimorphophyllus*, *A. Maackii*, *A. fastigiatus*, *A. scaber*, *A. rugulosus*, *A. Asa-Grayi*, *A. Miyagii*, *A. spathulifolius*, *A. Tripolium*, *A. dubius*, *Kalimeris pinnatifida*, and *Callistephus chinensis*. Some diploid species are relics and moreover morphologically isolated

such as *Aster dimorphophyllus*, *A. komonoensis*, *A. tenuipes*, and *Kalimeris Miqueliana*. Polyploid species, namely *Aster ageratoides* and its subspp., *Kalimeris Yomena*, *K. Pseudo-yomena*, *K. indica*, *K. incisa*, and *Heteropappus hispidus* are very abundant and widely distributed.

Aster tataricus ($2n=54$) is clearly defined and widely distributed, but in Kiushiu and Hondo discontinuously found and seems to be a relic of colder climate. *Gymnaster koraiensis* ($2n=144$) is restricted to Korea, without closely related species.

Vol. XIII, p. 302. *Gymnaster pygmaeus* (MAKINO) KITAMURA should be corrected as **Gymnaster Savatieri** subsp. **pygmaeus** KITAMURA comb. nov.

Vol. XIII, p. 307. **Kalimeris Shimadai** was found in Provs. Kiangsu, Kiangsi, Hupeh, Shansi, China. cf. KITAMURA in Journ. Jap. Bot. XIX (1943) p. 340.

Vol. XIII, p. 309. *Kalimeris pinnatifida* var. *dentata* KITAMURA should be treated as **Kalimeris Pseudo-yomena** KITAMURA. Syn. *Aster Yomena* var. *dentatus* (KITAM.) HARA, Enum. Sp. Jap. II (1952) p. 139. Add *Kalimeris pinnatifida* var. *angustifolia* NAKAI in Bull. Nat. Sci. Mus. No. 33 (1953) p. 26 as a syn. under **Kalimeris incisa**. Vol. XIII, p. 311. *Kalimeris incisa* var. *Yomena* KITAMURA should be corrected as **Kalimeris Yomena** KITAMURA, Kiku (1940) p. 40, Kiku (1948) p. 69. Syn. *Aster Yomena* (KITAM.) HONDA, SIEBOLD Kenkyu (1938) p. 586. *Kalimeris indica* var. *grandiflora* NAKAI in Bull. Nat. Sci. Mus. No. 33 (1953) p. 27.

Kalimeris incisa var. *Yomena* f. *tubulosa* KITAMURA should be treated as **Kalimeris Yomena** f. *tubulosa* KITAM. Syn. *Aster Yomena* HONDA f. *tubulosus* (KITAM.) HARA, Enum. Sperm. Jap. II (1952) p. 139.

Kalimeris Yomena ($2n=63$) is supposed to have started from the hybrid between *K. incisa* ($2n=72$) and *K. indica* ($2n=53$).

Vol. XIII, p. 315. *Heteropappus leptocladus* MATSUM. should be treated as **H. hispidus** subsp. **leptocladus** (MAKINO) KITAMURA stat. nov. This race is a serpentinomorphose (stenophyllism).

H. Koidzumianus KITAMURA should be treated as **H. hispidus** subsp. **Koidzumianus** KITAMURA.

Vol. XIII, p. 316. *H. arenarius* KITAMURA should be treated as **H. hispidus** subsp. **arenarius** KITAMURA stat. nov. This race was found in Insula Puto, Prov. Chekiang, China. cf. KITAMURA in Journ. Jap. Bot. XIX (1943) p. 341.

Vol. XIII, p. 317. *H. rupicola* KITAMURA should be treated as **H. hispidus** subsp. **rupicola** KITAMURA stat. nov.

Vol. XIII, p. 220. *Heteropappus Oldhami* KITAMURA should be treated as **H. hispidus** subsp. **Oldhami** (HEMSL.) KITAM. stat. nov.

Vol. XIII, p. 321. *H. insularis* (MAKINO) MATSUM. should be treated as **H. hispidus** subsp. **insularis** (MAKINO) KITAMURA stat. nov. Var. *Uchiyamanus* should be treated as **H. hispidus** subsp. **insularis** var. **Uchiyamanus** KITAMURA comb. nov.

Vol. XIII, p. 325. *Erigeron acre* var. *droebachensis* (non BLYTT) auct. jap. should be treated as **Erigeron acris** var. **kamtschaticus** HERDER, Pl. Radde, III 2 (1857) p. 290. Syn. *Erigeron angulosus* var. *kamtschaticus* HARA in Contr. Gray Herb. Harv. Univ. CXXVI (1939) p. 389 pro parte. *Erigeron acris* subsp. *kamtschaticus* (DC.) HARA in Journ. Jap. Bot. XV (1939) p. 317 in textu, Enum. Sperm. Jap. II (1952)

p. 195. *Erigeron acre* var. *asteroides* DC., sensu HULTÉN, Fl. Alaska X (1950) p. 1498.

Vol. XIII, p. 333. Add. *Aster tataricus* var. *hortensis* MAKINO in Jissai-Engei 27 (Dec. 13, 1941) p. 1097.—NAKAI in Journ. Jap. Bot. XVII (Jan. 1942) p. 682 is a syn. of *Aster tataricus* L. cf. KITAMURA in Acta Phytotax. Geobot. XII (1943) p. 101.

Vol. XIII, p. 343. *Aster microcephalus* FR. et SAV. should be treated as *Aster ageratoides* subsp. *microcephalus* KITAMURA in Acta Phytotax. Geobot. XII (1943) p. 100.

Vol. XIII, p. 344. *Aster lasiocladus* HAYATA should be treated as *Aster ageratoides* subsp. *lasiocladus* KITAMURA in Journ. Jap. Bot. XIX (1943) p. 339. Syn. *Aster ageratoides* var. *lasiocladus* HAND.-MAZT. in Acta Horti Göth. XII (1938) p. 215.

Aster Sugimotoi KITAMURA should be treated as *Aster ageratoides* subsp. *Sugimotoi* KITAMURA.

Vol. XIII, p. 345. For Chinese groups see HANDEL-MAZZETTI's work in Acta Horti Göth. XII (1938) pp. 210–216, and KITAMURA's work in Journ. Jap. Bot. XIX (1943) pp. 337–339. For Himalayan groups, the writer discussed in Fauna and Flora of Nepal Himalaya (1955) p. 247.

Vol. XIII, p. 347. Add *Aster ageratoides* var. *flexuosus* NAKAI in Bull. Nat. Sci. Mus. No. 33 (1953) p. 24 as a syn. under *Aster ageratoides* subsp. *leiophyllus*. Recently some authors treated *Aster leiophyllus* FR. et SAV. as specifically distinct from *Aster ageratoides*. While they treated Subsp. *ovatus* under *Aster ageratoides*. Subsp. *leiophyllus* seems to be more closely related to subsp. *ageratoides* than subsp. *ovatus*.

Vol. XIII, p. 350. *Aster semiamplexicaulis* var. *tomentosus* NAKAI in Bull. Nat. Sci. Mus. No. 33 (1953) p. 25 as a syn. under *Aster ageratoides* subsp. *amplexifolius*.

Vol. XIII, p. 351. Add *Aster micromaackii* NAKAI in Bull. Nat. Sci. Mus. No. 33 (1953) p. 26 as a syn. under *Aster ageratoides* subsp. *ovatus*.

Vol. XIII, p. 354. Add. *Aster microcephalus* var. *tubulosus* (MAKINO) HARA, Enum. Sperm. Jap. II (1952) p. 134 as a syn. under *Aster ageratoides* subsp. *tubulosus*.

Subsp. *tubulosus* is rather related to subsp. *leiophyllus* and should not be combined with *Aster microcephalus*. Subsp. *tubulosus* is still cultivated in Kansai gardens. It has comparatively larger heads and a little constricted leaves.

Dr. MAKINO made a book name *Aster microcephalus* var. *ripensis* f. *tubulosus* MAKINO or *A. trinervius* var. *congestus* f. *tubulosus* MAKINO.

Vol. XIII, p. 356. Add. *Aster microcephalus* var. *Yoshinaganus* (KITAM.) HARA, Enum. Sperm. Jap. II (1952) p. 135, should be treated as a syn. of *A. ageratoides* subsp. *Yoshinaganus* KITAMURA.

Subsp. *Yoshinaganus* is rather related to subsp. *leiophyllus* than to subsp. *microcephalus*. Subsp. *Yoshinaganus* is a very peculiar group with thin and broadly amplexicauline leaves.

Add *Aster parafastigiatus* NAKAI in Bull. Nat. Sci. Mus. No. 33 (1953) p. 25, as a name under *Aster ageratoides* subsp. *amplexifolius* × subsp. *leiophyllus*.

Vol. XIII, p. 357. Add *Aster perrugosus* NAKAI in Bull. Nat. Sci. Mus. No. 33

(1953) p. 25, as a name under *Aster ageratoides* subsp. *amplexifolius* × subsp. *ovatus*.

Vol. XIII, p. 358. *Aster Sekimotoi* MAKINO is a hybrid between *A. scaber* and *A. rugulosus*. Hence *A. Hashimotoi* KITAMURA become a syn. of *A. Sekimotoi*.

Vol. XIII, p. 365. *Aster ciliatus* KITAMURA should be corrected as *Aster Meyendorffii* (REGEL et MAACK) VOSS, VILMORINS Blumengartn. ed. 3: I (1894) p. 469.—HANDEL-MAZZETTI in Osterr. Bot. Zeit. (1939) p. 309.

Vol. XIII, p. 367. Add *Aster Uchiyamai* NAKAI in Journ. Jap. Bot. XVII (1941) p. 684 as a syn. under *Aster altaicus* var. *Uchiyamae* KITAMURA.

Vol. XIII, p. 368. Add syn. *Aster kyobuntoensis* NAKAI in Journ. Jap. Bot. XVII (1941) p. 684 under *Aster spathulifolius*.

Vol. XIII, p. 369. *Aster Asa-Grayi* MAKINO var. *Walkeri* KITAMURA var. nov. Syn. *Aster Walkeri* KITAMURA in litt.

Perennis. Caulis circ. 15 cm. altus e basi ramosus, ramis inferne procumbentibus superne ascendentibus, circ. 1.5 mm. diametro, dense pilosis, pilis albis patentibus. Folia inferiora spathulata 20–24 mm. longa 8–10 mm. lata apice rotundata margine integra utrinque pilis albis patentibus dense vestita, folia superiora sursum gradatim minora oblongo-lineariter 16–5 mm. longa 5–1.5 mm. lata. Capitula ad apices ramorum solitaria 3 cm. diametro. Involucrum hemisphaericum 6 mm. altum 16 mm. latum in sicco, squamae biseriales aequilongae, lineares apice acutae 6 mm. longae 1–1.2 mm. latae dorso patentim pilosae virides. Flores radii uniseriales, corolla dilute caerulea 11 mm. longa tubo 2 mm. longo. Achenia dense hirsuta. Pappus brunnescens 2 mm. longus, setis inaequilongis. Flores disci, corolla 3.8 mm. longa. Achenia immatura compressa 2.3 mm. longa dense hirsuta. Pappus 3 mm. longus brunnescens.

Hab. **Liukiu**. Yaeyama Islands. Insula Yonakuni, on rocky sandstone cliff, near contact with coral (27 aug. 1951 E. H. WALKER et S. TAWADA n. 6804), typus in Herb. Univ. Kyoto.

Vol. XIII, p. 374. Add *Aster dubius* f. *leucanthus* (HARA) KITAMURA comb. nov. Syn. *Erigeron Thunbergii* f. *leucanthus* HARA, Enum. *Sperm.* Jap. II (1952) p. 199. Nom. jap. *Shiobana-azumagiku*. Hab. Hondo. *Erigeron Thunbergii* subsp. *glabratus* (A. GRAY) HARA, Enum. *Sperm.* Jap. II (1952) p. 199, as a syn. under *Aster dubius* subsp. *consanguineus*.

Vol. XIII, p. 375. *Aster dubius* subsp. *glabratus* var. *angustifolius* HARA is a serpentinomorphose (stenophyllism).

Vol. XIII, p. 376. *Aster heterotrichus* HARA should be treated as *A. dubius* subsp. *glabratus* var. *heterotrichus* KITAMURA. This race is also a serpentinomorphose (stenophyllism).

Aster Tripolium L. f. *albiflorus* TOYAMA in Journ. Jap. Bot. XVIII (1941) p. 614. Hab. **Kiushiu**. Prov. *Hidzen*: Ohmura.

Vol. XIII, p. 378. KOSTER proposed *Eschenbackia viscidula* (Wall.) KOSTER in Blumea VII (1952) p. 290 and *E. japonica* (THUNB.) KOSTER, l. c.

Vol. XIII, p. 384. *Dichrocephala latifolia* DC. should be corrected as *Dichrocephala*

bicolor SCHLECHT. in Linnaea XXV (1852) p. 209.—KITAMURA in Acta Phytotax. Geobot. X (1941) p. 29. Syn. *Cotula bicolor* ROTH, Catal. Bot. II (1800) p. 116.

Vol. XIII, p. 390. *Lagenophora crepidioides* KOIDZUMI should be corrected as **Lagenophora stipitata** (LABILL.) DRUCE var. **microcephala** (BENTH.) DOMIN in Bibl. Bot. heft 89 (1929) p. 653.—KITAMURA in Acta Phytotax. Geobot. X (1941) p. 30.

Vol. XIII, p. 393. *Solidago mirabilis* KITAMURA should be treated as **S. Virga-aurea** subsp. **gigantea** (NAKAI) KITAMURA stat. nov. Syn. *S. Virga-aurea* var. *gigantea* NAKAI in Tokyo Bot. Mag. XLII (1928) p. 17.

Vol. XIII, p. 395. *Solidago decurrens* LOUREIRO should be corrected as **S. Virga-aurea** subsp. **leiocarpa** HULTÉN, Fl. Aleut. (1937) p. 315.

f. **paludosa** (HONDA) KITAMURA comb. nov. Syn. *S. Virga-aurea* var. *paludosa* HONDA in Tokyo Bot. Mag. XL (1937) p. 95.

var. **praefflorens** NAKAI in Tokyo Bot. Mag. XLII (1928) p. 16. Syn. *S. decurrens* var. *praefflorens* KITAMURA, *Comp. Jap.* I p. 397.

var. **coreana** NAKAI in Tokyo Bot. Mag. XXXI (1917) p. 110. Syn. *S. decurrens* var. *coreana* KITAMURA, l. c. p. 397.

Vol. XIII, p. 397. *Solidago japonica* KITAMURA should be **S. Virga-aurea** subsp. **asiatica** KITAMURA.—HARA, Enum. *Sperm.* Jap. II (1952) p. 260.

var. **insularis** (KITAMURA) HARA, Enum. *Sperm.* Jap. II (1952) p. 261. Syn. *S. japonica* var. *insularis* KITAMURA, l. c. p. 399.

Mutisieae

Vol. XV, p. 298. Add **Pertya scandens** SCHULTZ Bip. var. **Shimozawai** (MASAMUNE) KITAMURA in Acta Phytotax. Geobot. XII (1943) p. 104. Syn. *Pertya Shimozawai* MASAMUNE in Trans. Nat. Hist. Soc. Formos. XXX (1940) p. 37. Hab. **Formosa**. Prov. *Taichu*.

Vol. XV, p. 299. Add *Pertya glabrescens* var. *impressa* HONDA in Tokyo Bot. Mag. LIX (1946) p. 16.—*P. glabrescens* f. *impressa* (HONDA) HARA, Enum. (1952) p. 235 as a syn. under **P. glabrescens**.

Vol. XV, p. 302. *Pertya robusta* BEAUVERD should be corrected as **Pertya robusta** (MAXIM.) MAKINO in Tokyo Bot. Mag. XX (1906) p. 29 in nota sub *P. hybrida*.

Vol. XV, p. 315. Add *Ainsliaea Hui* DIELS ex MATTEFELD in Notiz. Bot. Gart. Mus. Berl.-Dahlem XI (1934) p. 109 as a syn. under **A. macroclinidioides**.—KITAMURA in Journ. Jap. Bot. XX (1944) p. 192.

This species is also distributed in China, Provs. *Chekiang*, *Fukien*, *Kiangsi*.

Vol. XV, p. 316. *Ainsliaea okinawaensis* HAYATA should be corrected as **A. macroclinidioides** var. **okinawaensis** (HAYATA) KITAMURA in Journ. Jap. Bot. XX (1944) p. 192.

Anthemideae

Species	Chromosome number		Investigator References
	Gametic	Somatic	
<i>Achillea</i>			
<i>sibirica</i>		36	HUZIWARA (in litt.)
<i>Chrysanthemum</i>			
<i>cuneifolium</i>		36	SHIMOTOMAI (in litt.)
<i>ornatum</i>			
var. <i>crassum</i>		90	SHIMOTOMAI (5).
<i>Yoshinaganthum</i>		36	SHIMOTOMAI (in litt.)
<i>Zawadskii</i>			
var. <i>latilobum</i>		9	SHIGENAGA
<i>Artemisia</i>			
<i>arctica</i>			
subsp. <i>sachalinensis</i>		18	SUZUKA (4).
<i>borealis</i>		18, 36	ERLANDSSON (2).
<i>campestris</i>	8	16	SUZUKA (4).
<i>capillaris</i>		18	SHIMOTOMAI (3).
<i>congesta</i>		36	SHIMOTOMAI (3).
<i>Feddei</i>		16	SUZUKA (4).
<i>Fukudo</i>		16	SHIMOTOMAI (3),
<i>intricata</i>		18	MASUDA
<i>Iwayomogi</i>		54	SUZUKA (4).
<i>japonica</i>		36	SHIMOTOMAI (3).
<i>Keiskeana</i>		18	SHIMOTOMAI (3).
<i>Koidzumii</i>			
var. <i>megaphylla</i>		54	SHIMOTOMAI (3).
<i>kurramensis</i>	9	18	SUZUKA (3).
<i>laciniata</i>		18	SUZUKA (4).
<i>lactiflora</i>		18	SUZUKA (4).
<i>latifolia</i>		36	SHIMOTOMAI (3), SUZUKA (4).
<i>maritima</i>	27	54	MASUDA, SUZUKA (4).
var. <i>dahurica</i>	18	36	SUZUKA (4).
<i>mongolica</i>		18	SUZUKA (4).
<i>montana</i>		51, 52, 53, 54	SHIMOTOMAI (3), SUZUKA (4).
<i>monophylla</i>		18	SUZUKA (4).
<i>parvifolia</i>		36	SHIMOTOMAI (3).
<i>pectinata</i>	9	18	SUZUKA (4).
<i>Princeps</i>		34	SUZUKA (4).
var. <i>orientalis</i>		34	SHIMOTOMAI (3).
<i>Schmidtiana</i>		18	SUZUKA (4).
<i>selengensis</i>		36	SHIMOTOMAI (3).
<i>Stelleriana</i>	9	18	SUZUKA (4).
<i>Tilesii</i>	27		CLAUSEN etc. (1).

- (1) CLAUSSSEN, KECK, HIESEY, Experimental Stud. on the nature of species. The genus *Artemisia*, 1940.
 (2) ERLANDSSON, in *Hereditas* XXV, 1939.
 (3) SHIMOTOMAI in *Jap. Journ. Genet.* 22, 1947.
 (4) SUZUKA in *Seiken Zihō* V, 1952.
 (5) SHIMOTOMAI in *Tokyo Bot. Mag.* LXIX, 1956.

From the chromosome numbers mentioned above, the writer considers that: The diploid species ($2n=18$) are old and clearly defined morphologically, such as *Artemisia arctica* subsp. *sachalinensis*, *A. Fukudo* ($2n=16$), *A. intricata*, *A. Keiskeana*, *A. laciniata*, *A. lactiflora*, *A. monophylla*, *A. pectinata*, *A. Schmidtiana*, and *A. Stelleriana*. Polyploid species namely *Artemisia montana*, *A. Princeps* and *A. asiatica* are dominant in the road side and continuously distributed.

Artemisia japonica group has 36 chromosomes, i. e. *A. japonica*, *A. congesta*, *A. parvifolia* (syn. *A. subdigittata*).

Ar. kurramensis ($n=9$) is closely related to *A. cina* ($n=9$).

Vol. XV, p. 323. *Achillea Ptarmica* subsp. *macrocephala* var. *yezoensis* KITAMURA is a serpentinomorphose (stenophyllism).

Vol. XV, p. 331. *Cotula anthemoides* (non L.) KITAMURA excl. syn. should be corrected as ***Cotula chinensis*** KITAMURA in Fauna and Flora of Nepal Himalaya (1955) p. 251. Syn. *Cotula hemisphaerica* (non WALL.) HARA in Journ. Jap. Bot. XVIII (1942) p. 5. Distr. **Formosa et China.**

Vol. XV, p. 341. *Chrysanthemum* Sect. *Eutanacetum* KITAM. should be treated as ***Chrysanthemum*** Sect. ***Tanacetum*** HOFFMANN.

Vol. XV, p. 353. Add *Chryanthemum Shiwoigiku* var. *ugoense* HARA et MORI in Journ. Jap. Bot. Vol. 30 (1955) p. 164. Nom. jap. *Ugoshiogiku*. Hab. Hondo. Prov. Ugo, as a syn. under ***Chrysanthemum Shiwoigiku***.

Vol. XV, p. 357. *Chrysanthemum Makinoi* MATSUM. et NAKAI was found in Prov. Hiuga, Kiushiu and Prov. Tosa, Shikoku.

Vol. XV, p. 359. *Chrysanthemum japonense* NAKAI should be treated as ***C. ornatum*** var. ***spontaneum*** (MAKINO) KITAMURA in Acta Phytotax. Geobot. XVI (1956) p. 160. Syn. *C. morifolium* var. *spontaneum* MAKINO in Journ. Jap. Bot. VIII (1933) p. 14. f. ***flavescens*** (MAKINO) KITAMURA, l. c. Syn. *C. japonense* f. *flavescens* KITAMURA, *Comp. Jap.* II p. 359.

var. ***crassum*** KITAMURA, l. c. (1956) p. 160. Syn. *C. japonense* var. *crassum* KITAMURA.

var. ***ashizuriense*** KITAMURA, l. c. (1956) p. 160. Syn. *C. japonense* var. *ashizuriense* KITAMURA.

Vol. XV, p. 360. *Chrysanthemum Zawadskii* HERB. was found in mt. Senjosan, Prov. Hoki, Hondo by Y. IKOMA.

Vol. XV, p. 365. *Chrysanthemum boreale* MAKINO was found in Chikamura, Prov. Hidzen, Kiushiu and on mt. Tsurugi, Prov. Awa, Shikoku.

Chrysanthemum boreale var. ***tomentellum*** (HAND.-MAZZETTI) KITAMURA in Acta Phytotax. Geobot. XII (1943) p. 106.—*C. arisanense* HAYATA sensu KITAMURA, *Comp. Jap.* II (1940) p. 364 pro min. parte quoad pl. ex Shinchiku. Distr. Formosa et China.

Vol. XV, p. 368. Add ***Chrysanthemum indicum*** f. ***leucanthum*** KITAMURA in Acta Phytotax. Geobot. X (1941) p. 172. Nom. jap. *Shiroshimakankiku*. Hab. Hondo. Kiushiu. ***Chrysanthemum indicum*** var. ***albescens*** MAKINO f. ***flaviflorum*** KITAMURA in Acta Phytotax. Geobot. X (1941) p. 173. Hab. Kiushiu. ***Chrysanthemum indicum*** var. ***Maruyamanum*** KITAMURA in Acta Phytotax. Geobot. X (1941) p. 173, Nom. jap.

Ottachi-kankiku. Hab. Hondo. Prov. Izumo.

Vol. XV, p. 369. *Chrysanthemum Aphrodite* KITAMURA should be corrected as *C. indicum* var. *Aphrodite* KITAMURA in Acta Phytotax. Geobot. XVI (1956) p. 160.

Vol. XV, p. 383. *Artemisia littoricola* KITAMURA should be treated as *A. japonica* subsp. *littoricola* KITAMURA stat. nov.

Vol. XV, p. 384. *Artemisia japonica* THUNB. is distributed westwards to Afghanistan. *Ar. parviflora* (non ROXB.) AITCHISON in Journ. Linn. Soc. XVIII (1880) p. 70 and *Ar. glabrata* DC. are synonyma of *A. japonica*.

Vol. XV, p. 403. *Artemisia arctica* LESS. sensu KITAMURA excl. syn. var. *pacifica* should be corrected as *Artemisia arctica* subsp. *sachalinensis* (Fr. SCHMIDT) HULTÉN in Nytt Magasin for Botanikk III (1954) p. 73. Syn. *A. arctica* subsp. *psilosantha* HULTÉN, l. c. *A. punctigera* KRASCHEN. in Mater. Hist. Fl. Veg. USSR II (1946) p. 131.

Most of the specimens cited by the writer have resin-dotted leaves and glabrous corollas. So they belong to subsp. *sachalinensis*. HULTÉN distinguished subsp. *psilosantha* from subsp. *sachalinensis* by the pubescent leaves with broader lobes, broader inflorescences and larger heads. The writer reexamined numerous specimens. He can not distinguish the two subspecies. Specimens from mt. Hoe, Saghalien have the pubescent leaves with broader lobes (moreover corollas are moderately pilose). Specimen from mt. Shiska, Saghalien has the pubescent leaves with broader lobes (corollas are slightly pilose) and larger heads (11.5 mm. in diameter). Specimens from Taraika, Saghalien have inflorescences narrow or broad, and glabrous leaves with sublinear lobes (corolla are glabrous). The latter is a lowland (Tundra) form. The pubescence of leaves varies considerably even in a same locality. In mt. Daisetsu, the type locality of *Ar. norvegica* var. *villosa* KOIDZUMI, there are many intermediate forms from the villose form to the pubescent one. The matter is more complicated by the existence of a group with villose resin-dotted leaves and villose corollas. *Artemisia arctica* subsp. *sachalinensis* var. *Sutoi* KITAMURA var. nov. Corolla villosa. Folia caulina bipinnatifida villosa glanduloso-punctata. Caulis 13–16 cm. altus. Hab. **Hokkaido**. Prov. *Ishikari*: mt. Daisetsu, Hakuundaira (2 aug. 1933 T. SUTO). Typus in Herb. Univ. Kyoto.

The type of var. *villosa* KOIDZUMI has villose resin-dotted leaves and glabrous corollas. The specimen collected by J. OHWI et R. YOSHII in Raisha, Insula Paramushir, Kuriles, has villose corollas and not so densely dotted leaves. So this belongs to subsp. *arctica*. The specimen collected by S. SAWADA at Yavina, Kamchatka has dotted leaves and glabrous corollas. *Ar. arctica* subsp. *sachalinensis* (subsp. *psilosantha*) is also in Kamchatka.

Vol. XV, p. 411. *Artemisia lavandulaefolia* DC. sensu KITAMURA should be corrected as *Ar. dubia* WALL. ex DC., Prodr. VI (1838) p. 110.—KITAMURA in Fauna and Flora of Nepal Himalaya (1955) p. 245.

Vol. XV, p. 413. *Artemisia gilvescens* MIQUEL was found in Provs. *Kiangsi*, *Hupeh*, China. cf. KITAMURA in Journ. Jap. Bot. XX (1944) p. 193.

Vol. XV, p. 425. Add *Artemisia princeps* var. *Momiyamae* HARA, Enum. *Sperm.*

Jap. II (1952) p. 123 as a syn. under *Artemisia Momiyamae*.
Vol. XV, p. 430. *Artemisia dubia* (non DC.) sensu KITAMURA should be corrected as *Artemisia princeps* var. *orientalis* (PAMP.) HARA, Enum. *Sperm.* Jap. II (1952) p. 123.

Senecioneae

Vol. XVI, p. 164. Add *Petasites japonicus* subsp. *giganteus* f. *pubescens* MAKINO in Journ. Jap. Bot. VII-4 (1931) p. 6 sub. var. *giganteus*. Nom. jap. *Ke-akitabuki* (MAKINO 1931). Hab. Hondo.

Vol. XVI, p. 168. Add *Arnica unalascensis* var. *Tschonoskyi* f. *sempilena* NAKAI in Journ. Jap. Bot. XIV (1938) p. 743. Nom. jap. *Hanyae-usagigiku*.

Vol. XVI, p. 193. Add syn. *Ligularia gigantissima* NAKAI in Journ. Jap. Bot. XX (1944) p. 137 and *L. splendens* (LÉVEL.) NAKAI, l. c. p. 141 under *Ligularia Fischerii* TURCZ. Add syn. *Ligularia sachalinensis* NAKAI, l. c. p. 140 under *L. Fischerii* f. *diabolica* KITAMURA.

Vol. XVI, p. 195. Add *Ligularia stenocephala* var. *oligantha* HARA, Enum. *Sperm.* Jap. II (1952) p. 229 as a syn. under *Ligularia stenocephala*.

Vol. XVI, p. 199. Add syn. *Ligularia palmatifida* (S. et Z.) NAKAI in Journ. Jap. Bot. XXV (1950) p. 135 under *L. japonica* LESS.

Ligularia japonica (THUNB.) LESS., Syn. Comp. (1832) p. 390 was published earlier than *Erythrocaete palmatifida* SIEB. et ZUCC., Fam. Nat. II (1846) p. 189. The writer considered *Ligularia japonica* LESS. as a new name published in 1832. Vol. XVI, p. 216. Add *Cacalia Kitamurae* NAKAI in Bull. Nat. Sci. Mus. No. 33 (1953) p. 23, as a syn. under *Cacalia hastata* subsp. *orientalis*.

Vol. XVI, p. 218. Add *Cacalia hastata* subsp. *orientalis* var. *hayachinense* KITAMURA in Acta Phytotax. Geobot. XIV (1952) p. 180.

Caulis 20–60 cm. altus flexuosus. Folia caulina media depresso-deltoido-hastata 5-lobata, alato-petiolata, 9–19 cm. longa et lata, petiolis 3–5 cm. latis. Involucrum 9 mm. longum, squamae 5–6. Hab. **Hondo**. Prov. *Rikuchu*: mt. Hayachine (9 aug. 1952 S. KITAMURA).

Vol. XVI, p. 236. Add *Senecio* (*Tephrosieris*) *Furusei* KITAMURA in Acta Phytotax. Geobot. XIV (1952) p. 147. A *S. flammeo* subsp. *glabrifolio*, caulibus arachnoideo-puberulis, foliis tenuioribus, capitulis flavis distinguendus. A *S. Takedano*, capitulis, longe radiatis flavis, involucro ebracteato distinguendus. Nom. jap. *Kibana-korinka*. Hab. **Hondo**. Prov. *Musashi*: mt. Futagoyama (14 jul. 1949 M. FURUSE).

Vol. XVI, p. 240. Add syn. *Senecio integrifolius* var. *spatulata* (MIQUEL) HARA, Enum. *Sperm.* Jap. II (1952) p. 254 under *S. integrifolius* subsp. *Fauriei*.

Vol. XVI, p. 242. Add syn. *Senecio Pierotii* var. *glabrescens* NAKAI in Journ. Jap. Bot. XXV (1950) p. 135 under *S. Pierotii*.

Vol. XVI, p. 245. Add *Senecio ovatus* (GAERTN.) WILLD., Sp. Pl. III—3 (1804) p. 2004.—NAKAI in Journ. Jap. Bot. XXII (1948) p. 151 cum. var. *oblongifolius* (SPENNER) NAKAI, l. c., var. *Turczaninowii* (DC.) NAKAI, l. c. p. 152, var. *angusti-*

folius (SPENNER) NAKAI, l. c. p. 153, var. *grossidens* NAKAI l. c. p. 154, var. *intermedius* NAKAI, l. c. p. 154, var. *japonicus* NAKAI, l. c. p. 154, and *Senecio nemorensis* var. *japonicus* (NAKAI) HARA, Enum. *Sperm.* Jap. II (1952) p. 256, as synonyma under **Senecio nemorensis**.

Vol. XVI, p. 248. Add *Senecio cannabifolius* var. *paludosus* TATEW., Rep. Veg. Is. Shikotan (1940) p. 56, Nom. jap. *Yachihangonso* as a syn. under **Senecio cannabifolius**.

Vol. XVI, p. 250. *Senecio ambraceus* TURCZ. var. *glaber* KITAMURA should be corrected as **Senecio manshuricus** KITAMURA in Journ. Jap. Bot. XXI (1947) p. 44.

Add. Syn. *Senecio argunensis* var. *tenuisectus* NAKAI in Journ. Jap. Bot. XVIII (1942) p. 607 under **S. argunensis**.

Add *Senecio argunensis* var. *pilosa* KITAMURA in Journ. Jap. Bot. XXI (1947) p. 55. Distr. Korea et Manshuria.

Ambrosieae

Vol. XVI, p. 281. Add *Xanthium strumarium* L. var. *japonicum* (WIDDER) HARA, Enum. *Sperm.* Jap. II (1952) p. 279 as a syn. under **Xanthium strumarium**.

Lactuceae

Vol. XXIII, p. 109. Add *Ixeris dentata* var. *angustifolia* (MAKINO) NAKAI in Journ. Jap. Bot. XXV (1950) p. 135 et var. *intermedia* NAKAI l. c. as syn. under **Ixeris Makinoana**.

Vol. XXIII, p. 119. Add *Ixeris dentata* var. *kiushiana* NAKAI in Journ. Jap. Bot. XXV (1950) p. 135 as a syn. under **Ixeris dentata** var. **stolonifera**.

Abbreviations

In this work the following abbreviations are used in the enumeration of specimens.

1. The names of the main collectors are shown only by initials, with a few exceptions to avoid confusion, and the reader may find their names in the following lines. The main collectors in this work are: Y. ARAKI, M. BOKU, Y. DOI, M. FURUMI, N. FUKUYAMA, U. FAURIE, Y. FUKUDA, B. HAYATA, C. HASHIMOTO, G. HASHIMOTO, H. HARA, M. HIROE, K. HISAUCHI, M. HONDA, S. HOSOMI, T. HOSOKAWA, K. IKEBE, Y. IKUMA, T. ISHIDOYA, T. IMAIZUMI, A. KIMURA, G. KOIDZUMI, K. KONDO, M. KOZUMA, N. KINASHI, S. KITAMURA, T. KAWAKAMI, Y. KUDO, B. MIYAZAWA, F. MAEKAWA, H. MURAMATSU, I. MARUYAMA, K. MAEBARA, K. MIYABE, (not abbreviated), S. MURAI, S. MATUDA, T. MAKINO (not abbr.), T. MIYAGI, (not abbr.), T. MIYAKE, J. MATSUMURA, T. MAGOFUKU, U. MORI, Y. MOMIYAMA, G. MURATA, G. NAKAHARA, J. NIKAI, M. NISHIJIMA, N. NAKAJIMA, S. NAGASAWA, T. NAKAI, C. OWATARI, H. OHBA, J. OHWI, K. ODASHIMA, M. OGATA, T. OTAYA, S. OKAMOTO, Y. OGAWA, D. SHIMIDZU, H. SEKIMOTO, I. SONO, J. SUGIMOTO, K. SHIWOTA, T. SAITO, S. SUGAWARA, S. SAKAGUCHI (not abbr.), T. SAWADA, Y. SHIMADA, G. TOBA, H. TSURUMACHI, H. TOBITA, E. J. TAQUET, M. TAGAWA (not abbr.), M. TATEWAKI, S. TAWADA, Y. TOKUBUCHI, Z. TASHIRO, H. YANAGISAWA, R. YOSHII, T. YOSHINAGA, Y. YUKI, N. UI, T. UCHIYAMA.

2. After the names of collectors, the herbariums where the specimens are preserved are designated by the following letters.

T. Herbarium of the University of Tokyo.

H. Herbarium of the Hokkaido University.

M. Herbarium of the National Science Museum, Tokyo.

Not otherwise recorded, the specimens are preserved in the Kyoto University.

Index of Scientific Names
for Pars 4, 5, 6 and all Genera
of *Compositae Japonicae**

(Synonyms in italics)

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* *Compositae Japonicae* Pars Prima in Memoirs of the College Science, Kyoto Imperial University, Series B. Vol. **XIII** (Dec. 1937): Pars Secunda, l. c. **XV**, No. 3 (Dec. 1940): Pars Tertia, l. c. **XVI**, No. 3 (March 1942): Pars Quarta in Memoirs of the College of Science, University of Kyoto, Series B. Vol. **XXII**, No. 1 (Dec. 1955): Pars Quinta, l. c. **XXIII**, No. 1 (Dec. 1956): Pars Sexta, l. c. **XXIV**, No. 1 (Oct. 1957).

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— — subsp. <i>glabratus</i>			<i>Brachyramphus sinicus</i> . . XXII	4	124
— — var. <i>angustifolius</i>			<i>Cacalia</i> XVI	3	202
— XXIV	6	55	— sect. <i>Dendrocacalia</i> . . XXII	4	113
— — var. <i>heterotrichus</i>			— <i>ameristophylla</i> . . . XXII	4	113
— XXIV	6	55	— <i>hastata</i> subsp. <i>orientalis</i> var.		
— <i>Hashimotoi</i> XXIV	6	55	— <i>hayachinensis</i> XXIV	6	60
— <i>heterotrichus</i> XXIV	6	55	— <i>Kitamuræ</i> XXIV	6	60
— <i>kyobuntoensis</i> XXIV	6	55	<i>Callistephus</i> XIII	1	313
— <i>lasiocladus</i> XXIV	6	54	<i>Carduus</i> XIII	1	32
— <i>Meyendorffii</i> XXIV	6	55	<i>Carpesium</i> XIII	1	268
— <i>microcephalus</i> XXIV	6	54	— <i>acutum</i> XXIV	6	49
— — var. <i>ripensis</i> . . XXIV	6	54	— <i>divaricatum</i> var. <i>Matsuei</i>		
— — f. <i>tubulosus</i> XXIV	6	54	— XXIV	6	48
— — var. <i>tubulosus</i> . XXIV	6	54	— <i>Koidzumii</i> var. <i>Matsuei</i>		
— — var. <i>Yoshinaganus</i> XXIV	6	54	— XXIV	6	48
— <i>micromaackii</i> XXIV	6	54	— <i>Matsuei</i> XXIV	6	48
— <i>parafastigiatus</i> . . . XXIV	6	54	— <i>nepalense</i> XXIV	6	49
— <i>perrugosus</i> XXIV	6	54	<i>Cephalonoplos</i> XIII	1	134
— <i>Sekimotoi</i> XXIV	6	55	<i>Centipeda</i> XV	2	331
— <i>semialexicaulis</i> . . . XXIV	6	54	<i>Chlorocrepis</i> XXIII	5	160
— — var. <i>tomentosus</i> . XXIV	6	54	<i>Chondrilla chinensis</i> . . . XXIII	5	112
— <i>spathulifolius</i> XXIV	6	55	— <i>debilis</i> XXIII	5	125
— <i>Sugimotoi</i> XXIV	6	54	— <i>dentata</i> XXIII	5	116
— <i>tataricus</i> var. <i>hortensis</i> XXIV	6	54	— <i>japonica</i> XXII	4	117

<i>Chondrilla lanceolata</i> . . . XXII	4	106	<i>Cirsium apoense</i> XXIV	6	44
— <i>lyrata</i> XXII	4	117	— <i>austrokiushianum</i> . . . XXIV	6	44
— <i>multiflora</i> XXII	4	117	— <i>boreale</i> XXIV	6	44
— <i>squarrosa</i> XXIII	5	137	— Buergeri XXIV	6	45
<i>Chorisis</i> XXIII	5		— <i>chinense</i> XXIV	6	45
	105, 127		— <i>laushanense</i> . . . XXIV	6	45
— <i>repens</i> XXIII	5	128	— <i>comosum</i> XXIV	6	45
<i>Chorisma</i> XXIII	5	127	— — var. <i>incomptum</i> . XXIV	6	45
<i>Chrysanthemum</i> XV	2	341	— — var. <i>Sawadae</i> . . XXIV	6	45
— sect. <i>Eutanacetum</i> . . XXIV	6	58	— — var. <i>yatsugatakense</i>		
— sect. <i>Tanacetum</i> . . XXIV	6	58	 XXIV	6	45
— <i>Aphrodite</i> XXIV	6	59	— Furusei XXIV	6	45
— <i>arisanense</i> XXIV	6	58	— <i>fusenense</i> XXIV	6	45
— boreale var. <i>tomentellum</i>			— Gyojanum XXIV	6	45
. XXIV	6	58	— japonicum XXIV	6	44
— indicum f. <i>leucanthum</i> XXIV	6	58	— var. <i>Nakaianum</i> . . . XXIV	6	44
— — var. <i>albescens</i> . XXIV	6	58	— var. <i>spinosissimum</i> . XXIV	6	44
— — f. <i>flaviflorum</i>			— var. <i>ussuriense</i> . . . XXIV	6	44
. XXIV	6	58	— <i>kamtschaticum</i> var. <i>boreale</i>		
— — var. <i>Aphrodite</i> . XXIV	6	59	 XXIV	6	44
— — var. <i>Maruyamanum</i>			— — subsp. <i>apoense</i> . XXIV	6	44
. XXIV	6	58	— — subsp. <i>pectinellum</i>		
— <i>japonense</i> XXIV	6	58	 XXIV	6	44
— — f. <i>flavescens</i> . . XXIV	6	58	— — — var. <i>alpinum</i> XXIV	6	44
— — var. <i>ashizuriense</i> XXIV	6	58	<i>Cirsium kitagoense</i> XXIV	6	44
— — var. <i>crassum</i> . . XXIV	6	58	— lineare var. <i>Franchetii</i> XXIV	6	45
— <i>ornatum</i> var. <i>ashizuriense</i>			— — — f. <i>pallidum</i> XXIV	6	45
. XXIV	6	58	— — var. <i>laushanense</i> XXIV	6	45
— — var. <i>crassum</i> . . XXIV	6	58	— — f. <i>vestitum</i> . . . XXIV	6	45
— — var. <i>spontanum</i> XXIV	6	58	— — var. <i>spathulatum</i> XXIV	6	45
— — — f. <i>flavescens</i> XXIV	6	58	— <i>lucens</i> XXIV	6	44
— <i>Shiwogiku</i> var. <i>ugoense</i> XXIV	6	58	— <i>Maackii</i> XXIV	6	44
<i>Cichoraceae</i> XXII	4	77	— — var. <i>Nakaianum</i> . XXIV	6	44
<i>Cichoreae</i> XXII	4	77	— — var. <i>spinosissimum</i>		
<i>Cichoriaceae</i> XXII	4	77	 XXIV	6	44
<i>Cichorioideae</i> XXII	4	77	— <i>nikkoense</i> XXIV	6	45
<i>Cirsium</i> XIII	1	33	— — var. <i>niveum</i> . . . XXIV	6	45
— sect. <i>Apalocentron</i> . . XXIV	6	44	— <i>nipponicum</i> XXIV	6	45
— — subsect. <i>Magofukui</i>			— — var. <i>amplifolium</i> XXIV	6	46
. XXIV	6	45	— — var. <i>comosum</i> . XXIV	6	45
— sect. <i>Chamaeleon</i> . . XXIV	6	44	— — var. <i>incomptum</i> . XXIV	6	45
— sect. <i>Odontolepis</i> . . XXIV	6	45	— — var. <i>indefensum</i> XXIV	6	46
— sect. <i>Onotrophe</i> . . . XXIV	6	44	— — var. <i>Sawadae</i> . . XXIV	6	45
— — subsect. <i>Odontolepis</i>			— — var. <i>shikokianum</i> XXIV	6	46
. XXIV	6	45	— — var. <i>tristissimum</i> XXIV	6	46
— <i>aomoreense</i> XXIV	6	44	— — var. <i>yatsugatakense</i>		
— — f. <i>echinoides</i> . . XXIV	6	45	 XXIV	6	45
— — var. <i>albiflorum</i> . XXIV	6	45	— — Yoshinoi XXIV	6	46

Cirsium Okamotoi	XXIV	6	46	Crepidiastrum koshunense . XXII	4	107
— oreithales	XXIV	6	45	— var. taiwanianum XXII	4	111
— var. laushanense XXIV	6	45		— lanceolatum	XXII	4 106
— pectinellum var. alpinum XXIV	6	44		— f. batakanense . XXII	4	108
— shantarense	XXIV	6	45	— f. pinnatilobum . XXII	4	108
— Sieboldii				— var. batakanense XXII	4	108
— subsp. austrokiushianum XXIV	6	44		— var. latifolium . XXII	4	109
— spinosum	XXIV	6	44	— f. subpetiolatum		
— Tanakae subsp. aomorense					XXII	4 100
.	XXIV	6	45	— linguaeifolium	XXII	4 114
— f. echinoides				— platyphyllum	XXII	4 109
.	XXIV	6	45	— f. subpetiolatum XXII	4	110
— f. leucanthum				— Quercus	XXII	4 108
.	XXIV	6	45	— taiwanianum	XXII	4 111
— f. yezoanum XXIV	6	45		Crepidinae	XXII	4 98
— subsp. nikkoense XXIV	6	45		Crepis	XXII	4 102
— var. niveum XXIV	6	45		— sect. Brachypodes	XXII	4 104
— yezoanum	XXIV	6	45	— sect. Intybellia	XXII	4 103
— Yoshinoi	XXIV	6	46	— sect. Intybelloides	XXII	4 103
— var. amplifolium XXIV	6	46		— sect. Suffruticosae	XXII	4 105
— var. shikokianum XXIV	6	46		— Bonii	XXIII	5 106
— var. tristissimum XXIV	6	46		— burejensis	XXII	4 104
— Zenii	XXIV	6	44	— formosana	XXII	4 120
Cnicus sinensis	XXIV	6	45	— graminifolia	XXIII	5 115
— uninervius	XXIV	6	45	— gymnopus	XXII	4 103
Conyza	XIII	1	378	— hokkaidoensis	XXII	4 104
— pubigera	XXIV	6	48	— integra	XXII	4 111
— riparia	XXIV	6	48	— β. platyphyllum . XXII	4	109
Cotula	XVI	2	230	— var. pinnatiloba . XXII	4	108
— anthemoides	XXIV	6	58	— japonica	XXII	4 118
— bicolor	XXIV	6	56	— var. Elstonii	XXII	4 118
— chinensis	XXIV	6	58	— var. formosana . XXII	4	120
— hemisphaerica	XXIV	6	58	— Keiskeana	XXII	4 110
Crepideae	XXII	4	98	— koshunense	XXII	4 107
Crepidiastrixeris	XXII	4	115	— lanceolata	XXII	4 106
— denticulato-lanceolata XXII	4	116		— var. pinnatiloba . XXII	4	108
— denticulato-platyphylla				— var. platyphylla . XXII	4	109
.	XXII	4	115	— linguaeifolia	XXII	4 113
— surugensis	XXII	4	115	— lyrata	XXII	4 118
Crepidiastrum	XXII	4	105	— Miyabei	XXII	4 104
— sect. Macrocrepidiastrum				— nana	XXII	4 107
.	XXII	4	113	— tanegana	XXII	4 107
— sect. Monostemma	XXII	4	111	Crossostephium	XV	2 339
— sect. Suffruticosae	XXII	4	106	Dendrocacalia	XVI	3 228
— ameristophyllum	XXII	4	113	Diaspanthus	XV	2 304
— grandicollum	XXII	4	112	Dichrocephala	XIII	1 384
— Keiskeanum	XXII	4	110	— bicolor	XXIV	6 56
— f. pinnatilobum XXII	4	111		— latifolia	XXIV	6 55

Echinops	XIII	1	14	Eupatorium japonicum var. <i>fragrans</i>		
Eclipta	XVI	3	265		XXIV	6 49
Elephantopus	XV	2	291	— var. <i>tozanense</i>	XXIV	6 49
Emilia	XVI	3	178	— var. <i>tripartitum</i>	XXIV	6 49
Erigeron	XIII	1	322	— subsp. <i>sachalinense</i>		
— acre var. <i>asteroides</i>	XXVI	6	54		XXIV	6 50
— — var. <i>draebachensis</i>				— <i>laciniatum</i>	XXIV	6 50
.	XXIV	6	53	— var. <i>dissectum</i>	XXIV	6 50
— var. <i>kamtschatica</i>				— <i>sachalinense</i>	XXIV	6 50
.	XXIV	6	53	— <i>stoechadosmum</i>	XXIV	6 50
— subsp. <i>kamtschaticus</i>				Farfugium	XVI	3 179
.	XXVI	6	53	Filifolium	XV	2 337
— <i>angulosus</i> var. <i>kamtschaticus</i>				Glossogyne	XVI	3 269
.	XXIV	6	53	Gnaphalium	XIII	1 214
— <i>Thunbergii</i> f. <i>leucanthus</i>				— adnatum	XXIV	6 47
.	XXIV	6	55	— affine	XXIV	6 47
— subsp. <i>glabratus</i>				— <i>formosanum</i>	XXIV	6 47
.	XXIV	6	55	— luteo-album	XXIV	6 47
<i>Erythrocaete pinnatifida</i>	XXIV	6	60	— subsp. <i>affine</i>	XXIV	6 47
Eschenbackia japonica	XXIV	6	48	— <i>multiceps</i>	XXIV	6 47
— viscidula	XXIV	6	48	Grangea	XIII	1 383
<i>Esopon</i>	XXIII	5		Gymnaster	XIII	1 301
		150, 152		— <i>pygmaeus</i>	XXIV	6 53
Eupatorium	XIII	1	283	— <i>Savatierii</i>	XXIV	6 53
— amabile	XXIV	6	50	— subsp. <i>pygmaeus</i>	XXIV	6 53
— chinense	XXIV	6	49	Gynura	XVI	3 175
— var. <i>angustatum</i>	XXIV	6	50	<i>Harpalyce</i>	XXIII	5 152
— var. <i>dissectum</i>	XXIV	6	50	Hemistepta	XIII	1 138
— var. <i>simplicifolium</i>				— <i>carthamoides</i>	XXIV	6 46
.	XXIV	6	49	— <i>lyrata</i>	XXIV	6 46
— f. <i>eglandulosum</i>				Heteropappus	XIII	1 314
.	XXIV	6	49	— <i>arenarius</i>	XXIV	6 53
— f. <i>fragrans</i>	XXIV	6	49	— hispidus	XXIV	6 53
— f. <i>tripartitum</i>				— subsp. <i>arenarius</i>	XXIV	6 53
.	XXIV	6	49	— subsp. <i>insularis</i>	XXIV	6 53
— var. <i>tozanense</i>	XXIV	6	49	— var. <i>Uchiyamanus</i>		
— subsp. <i>sachalinense</i>					XXIV	6 53
.	XXIV	6	50	— subsp. <i>Koidzumianus</i>		
— var. <i>hakonense</i>					XXIV	6 53
.	XXIV	6	50	— subsp. <i>leptocladius</i>		
— <i>Glehnii</i>	XXIV	6	50		XXIV	6 53
— var. <i>hakonense</i>	XXIV	6	50	— subsp. <i>Oldhami</i>	XXIV	6 53
— <i>formosanum</i>	XXIV	6	50	— subsp. <i>rupicola</i>	XXIV	6 53
— <i>Fortunei</i>	XXIV	6	50	— <i>insularis</i>	XXIV	6 53
— <i>hakonense</i>	XXIV	6	50	— var. <i>Uchiyamanus</i>	XXIV	6 53
— <i>japonicum</i>	XXVI	6	49	— <i>Koidzumianus</i>	XXIV	6 53
— var. <i>angustatum</i>	XXIV	6	50	— <i>leptocladius</i>	XXIV	6 53
— var. <i>eglandulosum</i>	XXIV	6	49	— <i>Oldhami</i>	XXIV	6 53

Heteropappus <i>rupicola</i> . . . XXIV	6	53	Inula britannica subsp. japonica		
<i>Hieracidae</i> XXII	4	98	f. <i>antiplena</i> XXIV	6	48
<i>Hieraciodes integrum</i> . . . XXII	4	107	— — — var. <i>antiplena</i>		
— <i>Keiskeanum</i> XXII	4	110	 XXIV	6	48
Hieracium sect. Aurelliformia			— <i>japonica</i> var. <i>sublanata</i> XXIV	6	48
. XXIII	5	162	— <i>Yoshizatoana</i> XXIV	6	48
— sect. <i>Euhieracium</i> . . . XXIII	5	161	Ixeris XXIII	5	105
— sect. <i>Stenotheca</i> . . . XXIII	5	161	— sect. <i>Chorisis</i> XXIII	5	127
— sect. <i>Umbellata</i> . . . XXIII	5	166	— sect. <i>Indo-ixeris</i> . . . XXIII	5	106
— subgen. <i>Archieracium</i> XXIII	5	161	— sect. <i>Ixeridium</i> . . . XXIII	5	108
— — sect. <i>Coreana</i> . . . XXIII	5	161	— sect. <i>Pseudo-chorisis</i> . XXIII	5	108
— subgen. <i>Euhieracium</i> . XXIII	5	161	— sect. <i>Sobolo-ixeris</i> . . XXIII	5	129
— subgen. <i>Stenotheca</i> . . XXIII	5	161	— subgen. <i>Crepidiastrum</i> XXII	4	105
— <i>coreanum</i> XXIII	5	161	— <i>albiflora</i> XXIII	5	119
— <i>Fauriei</i> XXIII	5	159	— <i>alpicola</i> XXIII	5	120
— <i>hololeion</i> XXIII	5		— — — var. <i>tenuissima</i> . XXIII	5	121
		158, 159	— <i>ameristophylla</i> . . . XXII	4	113
— <i>japonicum</i> XXIII	5	164	— <i>capillaris</i> XXIII	5	124
— <i>Krameri</i> XXIII	5	157	— <i>chinensis</i> XXIII	5	112
— <i>Morii</i> XXIII	5	165	— — — f. <i>lacerrima</i> . . . XXIII	5	113
— — — var. <i>tsugitakaensis</i>			— — — f. <i>taitoensis</i> . . . XXIII	5	113
. XXIII	5	165	— — — var. <i>saxatilis</i> . . . XXIII	5	113
— <i>Nakaii</i> XXIII	5	159	— — — subsp. <i>arenicola</i> XXIII	5	108
— <i>pinanense</i> XXIII	5	166	— — — subsp. <i>graminifolia</i>		
— <i>praelongum</i> XXIII	5	168	 XXIII	5	115
— <i>sparsum</i> subsp. <i>hololeion</i>			— — — subsp. <i>strigosa</i> . XXIII	5	114
. XXIII	5	158	— — — subsp. <i>versicolor</i> XXIII	5	115
— <i>triste</i> XXIII	5	163	— — — — — var. <i>intermedia</i>		
— <i>umbellatum</i> XXIII	5	166	 XXIII	5	115
— — — var. <i>commune</i> . . . XXIII	5	167	— <i>chinodebilis</i> XXIII	5	131
— — — var. <i>japonicum</i> . . . XXIII	5	167	— <i>debilis</i> XXIII	5	
— — — var. <i>linearifolium</i> XXIII	5	167			125, 126
— — — var. <i>serotinum</i> . . . XXIII	5	167	— — — f. <i>sinuata</i> XXIII	5	126
Hololeion XXIII	5	156	— — — subsp. <i>litoralis</i> . XXIII	5	126
— <i>Krameri</i> XXIII	5	157	— — — subsp. <i>liukuensis</i> XXIII	5	127
— — — var. <i>macrocephala</i>			— <i>dentata</i> XXIII	5	116
. XXIII	5	158	— — — f. <i>albida</i> XXIII	5	117
— <i>Maximowiczii</i> XXIII	5	158	— — — f. <i>albiflora</i> XXIII	5	118
— — — var. <i>Fauriei</i> XXIII	5	159	— — — f. <i>atropurpurea</i> . XXIII	5	118
Hypochaeris XXII	4	82	— — — f. <i>partita</i> XXIII	5	117
— sect. <i>Achyrophorus</i> . . . XXII	4	83	— — — var. <i>albiflora</i> . . . XXIII	5	118
— sect. <i>Amblachenium</i> . . . XXII	4	84	— — — — — f. <i>amplifolia</i> XXIII	5	118
— <i>ciliata</i> XXII	4	84	— — — — — f. <i>pinnata</i> . . . XXIII	5	119
— <i>crepidioides</i> XXII	4	83	— — — — — f. <i>pinnatifida</i>		
— <i>grandiflorus</i> XXII	4	84	 XXIII	5	118
Inula XIII	1	261	— — — var. <i>alpicola</i> . . . XXIII	5	120
— <i>britannica</i> subsp. <i>japonica</i>			— — — var. <i>amplifolia</i> . XXIII	5	119
. XXIV	6	48	— — — var. <i>angustifolia</i> XXIV	6	61

<i>Ixeris dentata</i> var. <i>atropurpurea</i>			<i>Ixeris</i> Makinoana	XXIII	5	109
—	XXIII	5	— <i>Matsumurae</i>	XXIII	5	106
— var. <i>intermedia</i> .	XXIV	6	— <i>microcephala</i>	XXIII	5	143
— var. <i>Kimurana</i> .	XXIII	5	— <i>musashiensis</i>	XXIII	5	132
— var. <i>kiushiana</i> .	XXIV	6	— <i>Nakazonei</i>	XXIII	5	131
— var. <i>leucantha</i> .	XXIII	5	— <i>nikoensis</i>	XXIII	5	132
— var. <i>ocloradiata</i> .	XXIII	5	— <i>nipponica</i>	XXIII	5	122
— f. <i>leucantha</i> .	XXIII	5	— <i>Oldhami</i>	XXIII	5	111
— var. <i>stolonifera</i> .	XXIII	5	— <i>polycephala</i>	XXIII	5	106
— subsp. <i>alpicola</i> .	XXIII	5	— f. <i>dissecta</i> . . .	XXIII	5	107
— var. <i>tenuissima</i>			— var. <i>dissecta</i> . .	XXIII	5	107
—	XXIII	5	— <i>Quercus</i>	XXII	4	108
— subsp. <i>Kimurana</i>	XXIII	5	— <i>ramosissima</i>	XXII	4	124
— f. <i>albescens</i> .	XXIII	5	— <i>repens</i>	XXIII	5	128
— var. <i>leucantha</i>			— <i>scaposa</i>	XXIII	5	114
—	XXIII	5	— var. <i>purpurascens</i>	XXIII	5	144
— subsp. <i>kitayamensis</i>			— <i>Sekimotoi</i>	XXIII	5	132
—	XXIII	5	— <i>serotina</i>	XXII	4	123
— subsp. <i>nipponica</i>	XXIII	5	— <i>sonchifolia</i>	XXII	4	123
— subsp. <i>shiranensis</i>			— var. <i>serotina</i> . .	XXII	4	123
—	XXIII	5	— <i>sororia</i>	XXIII	5	143
— subsp. <i>stolonifera</i>	XXIII	5	— <i>stolonifera</i>	XXIII	5	123
— <i>denticulata</i>	XXII	4	— f. <i>capillaris</i> . . .	XXIII	5	124
— f. <i>pinnatifidita</i> .	XXII	4	— f. <i>sinuata</i> . . .	XXIII	5	124
— subsp. <i>sonchifolia</i>	XXII	4	— var. <i>sinuata</i> . . .	XXIII	5	123
— <i>graminea</i>	XXIII	5	— subsp. <i>capillaris</i>	XXIII	5	124
		108, 115	— <i>taiwanianum</i>	XXII	4	111
— <i>graminifolia</i>	XXIII	5	— <i>tamagawaensis</i> . . .	XXIII	5	
— <i>japonica</i>	XXIII	5			108, 113	
— f. <i>dissecta</i>	XXIII	5	— <i>Thunbergii</i>	XXIII	5	116
— f. <i>integra</i>	XXIII	5	— <i>transnokoensis</i> . . .	XXIII	5	110
— var. <i>salsuginosa</i> .	XXIII	5	— <i>versicolor</i>	XXIII	5	
— subsp. <i>litoralis</i> .	XXIII	5			112, 114, 115	
— subsp. <i>salsuginosa</i>			<i>Ixyoungia</i>	XXIII	5	130
—	XXIII	5	— <i>Sekimotoi</i>	XXIII	5	130
— subsp. <i>trifida</i> .	XXIII	5	— <i>Yendoi</i>	XXIII	5	131
— <i>Kimurana</i>	XXIII	5	<i>Kalimeris</i>	XIII	1	304
— <i>koshunensis</i>	XXII	4	— <i>incisa</i>	XXIV	6	53
— <i>laevigata</i>	XXIII	5	— var. <i>Yomena</i> . . .	XXIV	6	53
— var. <i>lanceolata</i> .	XXIII	5	— f. <i>tubulosa</i> .	XXIV	6	53
— var. <i>Oldhami</i>	XXIII	5	— <i>indica</i>	XXIV	6	53
— <i>lanceolata</i>	XXII	4	— var. <i>grandiflora</i> .	XXIV	6	53
— subsp. <i>platyphylla</i>			— <i>pinnatifida</i> var. <i>angustifolia</i>			
—	XXII	4	—	XXIV	6	53
— <i>linguaeifolia</i>	XXII	4	— var. <i>dentata</i> . . .	XXIV	6	53
— <i>litoralis</i>	XXIII	5	— <i>Pseudo-yomena</i> . . .	XXIV	6	53
— <i>longirostrata</i>	XXIII	4	— <i>Shimadai</i>	XXIV	6	53
— <i>lyrata</i>	XXII	4	— <i>Yomena</i>	XXIV	6	53

Kalimeris Yomena f. tubulosa XXIV	6	53	Lactuca denticulata var. sonchifolia		
Lactuca XXIII	5	133	 XXII	4	123
— sect. <i>Chorisma</i> XXIII	5	127	— var. <i>Yoshinoi</i> XXII	4	122
— sect. <i>Cicerbita</i> XXIII	5	134	— <i>denticulato-platyphylla</i> XXII	4	115
— sect. <i>Ixeris</i> XXIII	5	105	— <i>dracoglossa</i> XXIII	5	138
— sect. <i>Lactucopsis</i> XXIII	5	134	— <i>elata</i> XXIII	5	140
— sect. <i>Prenanthesiae</i> XXIII	5		— <i>flavissima</i> XXIII	5	112
		150, 152	— <i>Fischeriana</i> XXIII	5	115
— sect. <i>Pterachenium</i> XXIII	5	136	— <i>formosana</i> XXIII	5	141
— sect. <i>Scariola</i> XXIII	5	136	— <i>Fukuyamae</i> XXIII	5	151
— sect. <i>Sororiae</i> XXIII	5	143	— <i>grandicolla</i> XXII	4	112
— sect. <i>Tuberosae</i> XXIII	5	136	— <i>hallaisanensis</i> XXIII	5	115
— subgen. <i>Cicerbita</i> XXIII	5	134	— <i>indica</i> XXIII	5	136
— subgen. <i>Mulgedium</i> XXIII	5	134	— f. <i>indivisa</i> XXIII	5	137
— <i>albiflora</i> XXIII	5		— f. <i>runcinata</i> XXIII	5	137
		114, 119	— var. <i>dracoglossa</i> XXIII	5	138
— <i>alliaeraefolia</i> XXIII	5	139	— var. <i>laciniata</i> XXIII	5	137
— <i>al'picola</i> XXIII	5	120	— <i>Keiskeana</i> XXII	4	110
— <i>ameristophylla</i> XXII	4	113	— <i>lacerrima</i> XXIII	5	113
— <i>amurensis</i> XXIII	5	137	— f. <i>flavissima</i> XXIII	5	112
— <i>aogashimensis</i> XXIII	5	140	— var. <i>saxatilis</i> XXIII	5	114
— <i>bialata</i> XXIII	5	137	— <i>laciniata</i> XXIII	5	136
— <i>biauriculata</i> XXIII	5	106	— <i>laevigata</i> XXIII	5	
— <i>Blinii</i> XXIII	5	153			110, 112
— <i>brevirostris</i> XXIII	5	136	— <i>lanceolata</i> XXII	4	107
— <i>Bungeana</i> XXII	4	123	— var. <i>batakanensis</i> XXII	4	108
— <i>Cavaleriei</i> XXIII	5	136	— var. <i>platyphylla</i> XXII	4	109
— <i>chelidoniifolia</i> XXII	4	121	— <i>linguaefolia</i> XXII	4	113
— <i>chinensis</i> XXIII	5		— <i>longirostrata</i> XXIII	5	129
		112, 114, 115	— <i>Makinoana</i> XXIII	5	109
— f. <i>graminea</i> XXIII	5	115	— <i>mansuensis</i> XXIII	5	145
— <i>crepidioides</i> XXIII	5	116	— <i>Matsumurae</i> XXIII	5	106
— <i>debilis</i> XXIII	5	125	— var. <i>dissecta</i> XXIII	5	107
— f. <i>pinnatifida</i> XXIII	5	125	— <i>Morii</i> XXIII	5	141
— var. <i>integra</i> XXIII	5	125	— <i>musashiensis</i> XXIII	5	132
— var. <i>sinuata</i> XXIII	5	126	— <i>napiifolia</i> XXII	4	118
— <i>dentata</i> XXIII	5		— <i>nummularifolia</i> XXIII	5	123
		110, 116	— <i>Oldhami</i> XXIII	5	111
— var. <i>albiflora</i> XXIII	5	118	— <i>platyphylla</i> XXII	4	109
— var. <i>flaviflora</i> XXIII	5	116	— <i>polycephala</i> XXIII	5	106
— — — — —			— <i>Quercus</i> XXII	4	108
subvar. <i>alpicola</i> XXIII	5	120	— <i>Raddeana</i> XXIII	5	
— var. <i>lanceolata</i> XXIII	5	110			138, 140
— var. <i>stolonifera</i> XXIII	5	119	— var. <i>elata</i> XXIII	5	139
— var. <i>Thunbergii</i> XXIII	5	117	— <i>repens</i> XXIII	5	128
— f. <i>partita</i> XXIII	5	117	— <i>Senecio</i> XXII	4	121
— <i>denticulata</i> XXII	4	124	— <i>sibirica</i> XXIII	5	134
— f. <i>pinnatifartita</i> XXII	4	126	— f. <i>albiflora</i> XXIII	5	135

<i>Lactuca sibirica</i> f. <i>dentata</i>	XXIII	5	135	<i>Lapsana uncinata</i>	XXII	4	101
— — f. <i>integrifolia</i>	XXIII	5	135	<i>Lasiospermum</i>	XXII	4	85
— — <i>sonchifolia</i>	XXII	4	123	<i>Lasiospora</i>	XXII	4	85
— — <i>Yoshinoi</i>	XXII	4	122	<i>Leibnitzia</i>	XV	2	293
— — <i>sororia</i>	XXIII	5	143	<i>Leontodon</i> <i>aeae</i>	XXII	4	82
— — var. <i>pilipes</i>	XXIII	5	144	Leontodontinae	XXII	4	82
— — <i>squarrosa</i>	XXIII	5	136	Leontopodium	XXIII	1	224
— — var. <i>laciniata</i>	XXIII	5	137	— Fauriei var. <i>angustifolium</i>			
— — <i>stenophylla</i>	XXIII	5	110	— — — — —	XXIV	6	47
— — <i>stolonifera</i>	XXIII	5	123	— — hayachinense			
— — var. <i>sinuata</i>	XXIII	5	123	— — var. <i>Miyabeanum</i> XXIV	6	47	
— — <i>strigosa</i>	XXIII	5	114	— — japonicum			
— — <i>surugensis</i>	XXII	4	115	— — var. <i>angustifolium</i>			
— — <i>taitoensis</i>	XXIII	5	113	— — <i>spathulatum</i>	XXIV	6	47
— — <i>taiwaniana</i>	XXII	4	111	— — — — —	XXIV	6	47
— — <i>Takasei</i>	XXII	4	100	Ligularia	XVI	3	183
— — <i>tamagawaensis</i>	XXIII	5	108	— — Fisherii	XXIV	6	60
— — <i>Taquetii</i>	XXII	4	118	— — — — f. <i>diabolica</i>	XXIV	6	60
— — <i>Taraxacum</i>	XXI	5	118	— — <i>gigantea</i>	XXIV	6	60
— — <i>Tatarinovii</i>	XXIII	5	154	— — japonica	XXIV	6	60
— — <i>Thunbergiana</i>	XXIII	5	111	— — <i>palmatifida</i>	XXIV	6	60
— — <i>Thunbergii</i>	XXIII	5	116	— — <i>sachalinensis</i>	XXIV	6	60
— — — — <i>lusus alpicola</i>	XXIII	5	120	— — <i>splendens</i>	XXIV	6	60
— — — — var. <i>albiflora</i>	XXIII	5	118	— — <i>stenocephala</i>			
— — — — var. <i>angustifolia</i> XXIII	5	109		— — — — var. <i>oligantha</i>	XXIV	6	60
— — <i>transnokoensis</i>	XXIII	5	110	<i>Ligulatae</i>	XXII	4	77
— — <i>triangulata</i>	XXIII	5	142	<i>Liguliflorae</i>	XXII	4	77
— — — — var. <i>sachalinensis</i> XXIII	5	142		Matricaria	XV	2	333
— — <i>trifida</i>	XXIII	5	126	<i>Medicusia</i>	XXII	4	90
— — <i>Vanioti</i>	XXIII	5	139	Microglossa	XIII	1	281
— — <i>versicolor</i>	XXIII	5	112, 115	Mikania	XIII	1	281
— — — — var. <i>arenicola</i>	XXIII	5	108	Miricacalia	XVI	3	227
Lactucae	XXII	4	77	<i>Mulgedium</i>	XXIII	5	133
Lactuceae	XXII	1	77	— — sect. <i>Lactucopsis</i>	XXIII	5	134
Lagenophora	XIII	1	389	— — <i>sibiricum</i>	XXIII	5	134
— — <i>crepidioides</i>	XXIV	6	56	<i>Mycelis sororia</i>	XXIII	4	143
— — <i>stipitata</i>				— — — — var. <i>nudipes</i>	XXIII	5	143
— — — — var. <i>microcephala</i> XXIV	6	56		— — — — var. <i>pilipes</i>	XXIII	5	143
Lagdera	XXIII	1	250	Myriactis	XXIII	1	386
<i>Lagoseris versicolor</i>	XXIII	5	115	<i>Nabalus</i>	XXIII	5	152
<i>Lampsana</i>	XXII	4	99	— — <i>acerifolia</i>	XXIII	5	155
Lapsana	XXII	4	99	— — <i>Krameri</i>	XXIII	5	157
— — <i>apogonoides</i>	XXII	4	109	— — <i>nipponicus</i>	XXIII	5	156
— — <i>humilis</i>	XXII	4	100	— — <i>ochroleuca</i>	XXIII	5	152, 153
— — <i>musashiensis</i>	XXII	4	100	— — <i>repens</i>	XXIII	5	128
— — <i>parviflora</i>	XXII	4	100	— — <i>Tanakae</i>	XXIII	5	152
— — <i>Takasei</i>	XXII	4	99	— — <i>Tatarincwii</i>	XXIII	5	154

Onotrophe sect. *Apalocentron*

	XXIV	6	44
<i>Oreophila sibirica</i>	XXII	4	84
<i>Paraixeris chelidoniifolia</i>	XXII	4	121
— <i>denticulata</i>	XXII	4	124
— — <i>f. pallescens</i>	XXII	4	126
— — <i>f. pinnatipartita</i>	XXII	4	125
— <i>denticulato-platyphylla</i>	XXII	4	115
— <i>surugensis</i>	XXII	4	115
— <i>Yoshinoi</i>	XXII	4	122
<i>Pertya</i>	XV	2	296
— <i>glabrescens</i> f. <i>impressa</i>	XXIV	6	56
— — var. <i>impressa</i>	XXIV	6	56
— <i>robusta</i>	XXIV	6	56
— <i>scandens</i>	XXIV	6	56
— — var. <i>Shimozawai</i>	XXIV	6	56
— <i>Shimozawai</i>	XXIV	6	56
<i>Petasites</i>	XVI	3	160
— <i>japonicus</i> subsp. <i>giganteus</i>	XXIV	6	60
— <i>f. pubescens</i>	XXIV	6	60
<i>Phaenopus</i>	XXIII	5	133
<i>Phaenixopus</i>	XXIII	5	133
<i>Picris</i>	XXII	4	90
— <i>crepioides</i>	XXII	4	90
— <i>flexuosa</i>	XXII	4	91
— <i>hieracioides</i>	XXII	4	91, 95
— — var. <i>alpina</i>	XXII	4	93
— — var. <i>flexuosa</i>	XXII	4	91
— — var. <i>indica</i>	XXII	4	94
— — var. <i>japonica</i>	XXII	4	91
— — var. <i>kamtschatica</i>	XXII	4	93
— — subsp. <i>japonica</i>	XXII	4	91
— — var. <i>akaishiensis</i>	XXII	4	93
— — ————	XXII	4	93
— — ———— var. <i>koreana</i>	XXII	4	94
— — ———— subsp. <i>kaimaensis</i>	XXII	4	94
— — ———— subsp. <i>kamtschatica</i>	XXII	4	93
— — ————	XXII	4	93
— — ———— subsp. <i>jessoensis</i>	XXII	4	97
— — ———— subsp. <i>Mayebarae</i>	XXII	4	96
— — ———— subsp. <i>morrisonensis</i>	XXII	4	95
— — ————	XXII	4	95
— — ———— subsp. <i>Ohwiana</i>	XXII	4	96
— — <i>japonica</i>	XXII	4	91
— — ———— var. <i>akaishiensis</i>	XXII	4	93
— — ———— var. <i>koreana</i>	XXII	4	93
— — ———— var. <i>jessoensis</i>	XXII	4	97

Picris japonica var. *Mayebarae*

.	XXII	4	96
— — ———— subsp. <i>dahurica</i>			
— — ———— var. <i>koreana</i>	XXII	4	93
— — ———— <i>jessoensis</i>	XXII	4	97
— — ———— <i>kaimaensis</i>	XXII	4	94
— — ———— <i>kamtschatica</i>	XXII	4	93
— — ———— <i>morrisonensis</i>	XXII	4	95
— — ———— <i>Ohwiana</i>	XXII	4	96
<i>Pilosella</i>	XXIII	5	160
— <i>tristis</i>	XXIII	5	163
<i>Piptopogon macrospermus</i>	XXII	4	86
<i>Pluchea</i>	XIII	1	259
<i>Prenanthes</i>	XXIII	5	150
— sect. <i>Euprenanthes</i>	XXIII	5	150
— sect. <i>Nabalus</i>	XXIII	5	152
— subg. <i>Nabalus</i>	XXIII	5	152
— <i>acerifolia</i>	XXIII	5	155
— — <i>f. heterophylla</i>	XXIII	5	156
— — <i>f. nipponica</i>	XXIII	5	156
— — ———— var. <i>nipponica</i>	XXIII	5	156
— — <i>chinensis</i>	XXIII	5	
— — ————			112, 114
— — <i>debilis</i>	XXIII	5	125
— — <i>dentata</i>	XXIII	5	116
— — <i>denticulata</i>	XXII	4	124
— — <i>Fauriei</i>	XXIII	5	159
— — <i>fastigiata</i>	XXII	4	117
— — <i>formosana</i>	XXIII	5	151
— — <i>graminea</i>	XXIII	5	115
— — <i>graminifolia</i>	XXIII	5	159
— — <i>Henryi</i>	XXIII	5	151
— — <i>hololeion</i>	XXIII	5	159
— — ———— var. <i>Fauriei</i>	XXIII	5	159
— — <i>hastata</i>	XXII	4	124
— — <i>humilis</i>	XXII	4	100
— — <i>integra</i>	XXII	4	106
— — <i>japonica</i>	XXII	4	117
— — <i>Krameri</i>	XXIII	5	157
— — <i>laciniata</i>	XXIII	5	136
— — <i>laevigata</i>	XXIII	5	110
— — <i>lanceolata</i>	XXII	4	106
— — <i>lyrata</i>	XXII	4	117
— — <i>multiflora</i>	XXII	4	117
— — <i>ochroleuca</i>	XXIII	5	
— — ————			152, 153
— — ———— var. <i>Tanakae</i>	XXIII	5	152
— — <i>procumbens</i>	XXII	4	117

<i>Prenanthes repens</i>	XXIII	5	128	<i>Scorzonera glabra</i>	XXII	4	89
— <i>sonchifolia</i>	XXII	4	123	— <i>macrosperma</i>	XXII	4	86
— <i>squarrosa</i>	XXIII	5	136	— <i>radiata</i>	XXII	4	
— <i>striata</i>	XXII	4	117				87, 88, 89
— Tanakae	XXIII	5	152	— — f. <i>humilis</i>	XXII	4	88
— Tatarinowii	XXIII	5	154	— — var. <i>humilis</i>	XXII	4	87, 88
— <i>versicolor</i>	XXIII	5	115	— — var. <i>subacaulis</i>	XXII	4	87
<i>Rhapontica</i>	XIII	1	30	— <i>rebunensis</i>	XXII	4	88
<i>Rhyncospermum</i>	XIII	1	388	— <i>Ruprechtiana</i>	XXII	4	89
<i>Saussurea</i>	XIII	1	140	<i>Scorzonereae</i>	XXII	4	82
— <i>amabilis</i>	XXIV	6	46	<i>Senecillicacalia</i>	XVI	3	226
— <i>chinnampoensis</i>	XXIV	6	46	<i>Senecio</i>	XVI	3	229
— <i>chionophylla</i>	XXIV	6	46	— <i>ambraceus</i> var. <i>glaber</i>	XXIV	6	61
— <i>glomerata</i>	XXIV	6	46	— <i>argunensis</i>			
— <i>inaensis</i>	XXIV	6	46	— — var. <i>pilosa</i>	XXIV	6	61
— <i>japonica</i>	XXIV	6	46	— — var. <i>temuisectus</i>	XXIV	6	61
— <i>Kudoana</i>	XXIV	6	46	— <i>cannabifolius</i>			
— <i>macrocephala</i>	XXIV	6	46	— — var. <i>paludosus</i>	XXIV	6	61
— <i>Muramatsui</i>	XXIV	6	46	— <i>Furusei</i>	XXIV	6	60
— <i>nipponica</i> subsp.				— <i>manshuricus</i>	XXIV	6	61
— — <i>hokurokuensis</i>	XXIV	6	46	— <i>nemorensis</i>			
— — subsp. <i>Muramatsui</i>				— — var. <i>japonicus</i>	XXIV	6	61
— —	XXIV	6	46	— <i>Pierotii</i>			
— <i>nutans</i>	XXIV	6	46	— — var. <i>glabrescens</i>	XXIV	6	60
— <i>peipingensis</i>	XXIV	6	46	— <i>ovatus</i>	XXIV	6	60
<i>Saussurea Riederii</i> var. <i>albiflora</i>	XXIV	6	46	— — var. <i>angustifolius</i>	XXIV	6	60
— — subsp. <i>Kudoana</i>	XXIV	6	46	— — var. <i>grossidens</i>	XXIV	6	61
— — subsp. <i>yezoensis</i>				— — var. <i>intermedius</i>	XXIV	6	61
— f. <i>albiflora</i>	XXIV	6	46	— — var. <i>japonicus</i>	XXIV	6	61
— <i>scabra</i>	XXIV	6	46	— — var. <i>oblongifolius</i>	XXIV	6	60
— <i>sinuata</i>	XXIV	6	46	— — var. <i>Turczaninowii</i>	XXIV	6	60
— <i>stenolepis</i>	XXIV	6	46				
<i>Scorzonera</i>	XXII	4	85	<i>Serratula</i>	XIII	1	27
— sect. <i>Euscorzonera</i>	XXII	4	85	— <i>amara</i>	XXIV	6	46
— sect. <i>Fibrillosae</i>	XXII	4	89	— <i>carthamoides</i>	XXIV	6	46
— sect. <i>Lasiophora</i>	XXII	4	85	— <i>coronata</i> subsp. <i>insularis</i>			
— — subsect. <i>Fibrillosae</i>				— —	XXIV	6	44
— —	XXII	4	89	— — f. <i>albiflora</i>	XXIV	6	44
— — subsect. <i>Macrospermae</i>				— — — var. <i>koreana</i>	XXIV	6	44
— —	XXII	4	86	— <i>insularis</i>	XXIV	6	44
— — subsect. <i>Radiatae</i>	XXII	4	87	— — f. <i>albiflora</i>	XXIV	6	44
— sect. <i>Macrospermae</i>	XXII	4	86	— — var. <i>koreana</i>	XXIV	6	44
— sect. <i>Radiatae</i>	XXII	4	87	<i>Siegesbeckia</i>	XVI	3	261
— <i>albicaulis</i>	XXII	4	86	<i>Solidago</i>	XIII	1	392
— — var. <i>macrosperma</i>	XXII	4	86	— <i>decurrens</i>	XXIV	6	56
— <i>austriaca</i> var. <i>glabra</i>	XXII	4	89	— — var. <i>koreana</i>	XXIV	6	56
— — var. <i>longifolia</i>	XXII	4	89	— <i>japonica</i>	XXIV	6	56
				— — var. <i>insularis</i>	XXIV	6	56

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Pinan-miyama-kozorina	XXIII	5	166	Tsuru-kawara-nigana	XXIII	5	132
Ranshu-tampopo	XXIV	6	41	Tsuru-wadan	XXIII	5	130
Riuzetsusai	XXIII	5	138	Ugoshigiku	XXIV	6	58
Ryoto-tampopo	XXIV	6	41	Usagiso	XXIII	5	113
Saishu-tampopo	XXIV	6	40, 41	Usuba-tampopo	XXIV	6	29
Saitokusa	XXIII	5	156	Usugi-inugawa-tampopo	XXIV	6	30
Sankaku-kireha-tampopo	XXIV	6	9	Usugi-tampopo	XXIV	6	21
Saruiwa-tampopo	XXIV	6	31	Usuiro-tampopo	XXIV	6	41
Seitaka-kanchi-tampopo	XXIV	6	14	Usuiro-yakushiso	XXII	4	126
Seitaka-tampopo	XXIV	6	34	Usujiro-kwanto-tampopo	XXIV	6	33
Sendai-tampopo	XXIV	6	34	Usujiro-tampopo	XXIV	6	30
Shikoku-miyama-tampopo	XXIV	6	23	Wadan	XXII	4	109
Shikoku-tampopo	XXIV	6	23	Yabu-tabirako	XXII	4	101
Shikotan-tampopo	XXIV	6	12	Yakushi-azetona	XXII	4	116
Shimanogeshi	XXIII	5	141	Yakushi-hosoba-wadan	XXII	4	116
Shimofuri-tampopo	XXIV	6	16	Yakushiso	XXII	4	125
Shimushi-tampopo	XXIV	6	8	Yakushiwadan	XXII	4	115
Shiraga-tampopo	XXIV	6	26	Yama-nigana	XXIII	5	140
Shirane-nigana	XXIII	5	122	Yama-tampopo	XXIV	6	29
Shirobana-azumagiku	XXIV	6	55	Yamazato-tampopo	XXIV	6	36
Shirobana-kita-azami	XXIV	6	46	Yanagiba-baramonjin	XXII	4	87
Shirobana-kumoma-nigana	XXIII	5	121	Yanagi-nigana	XXIII	5	111
Shirobana-nigana	XXIII	5	118	Yanagi-tampopo	XXIII	5	167
Shirobana-tampopo	XXIV	6	20	Yanone-jishibari	XXII	4	100
Shirouma-tampopo	XXIV	6	11	Yatsugatake-tampopo	XXIV	6	8
Shumushu-tampopo	XXIV	6	9	Yetchu-tampopo	XXIV	6	34
Sotetsuba-azetona	XXII	4	111	Yetrofu-tampopo	XXIV	6	27
Suiran	XXIII	5	158	Yezo-kozorina	XXII	4	83
Suitampo	XXIII	5	153	Yezo-murasakinigana	XXIII	5	135
Tabirako	XXII	4	102	Yezo-tampopo	XXIV	6	29
Taito-takasagoso	XXIII	5	113	Yezo-takane-nigana	XXII	4	104
Taiwan-fukuoso	XXIII	5	151	Yogore-tampopo	XXIV	6	38
Taiwan-hachijona	XXIII	5	148	Yubari-tampopo	XXIV	6	4
				Yuzuriha-wadan	XXII	4	114



Fig. 1. 1. *Taraxacum chirieanum* KITAMURA from Chirie, Saghalien.
2. *T. shumushuense* KITAMURA from insl. Shumushu, Kuriles.
3. *T. yuparense* H. KOIDZ. from mt. Yubari, prov. Ishikari.

×0.45.

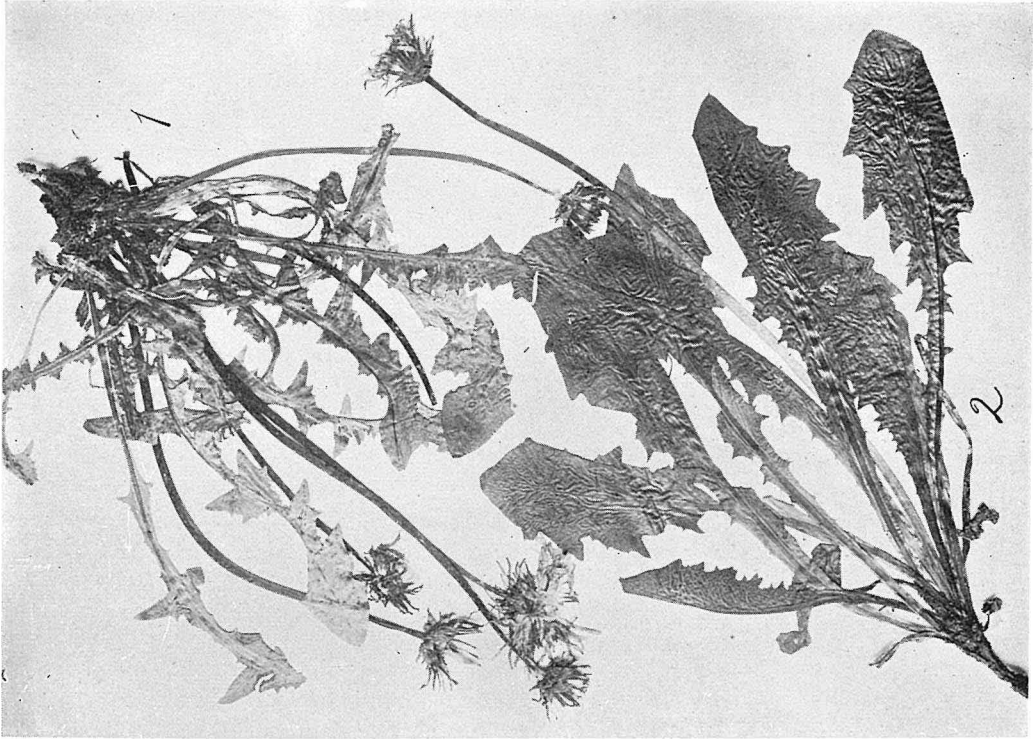


Fig. 3. 1. *Taraxacum shikotanense* KITAMURA from Insl. Shikotan, Kuriles. 2. *T. alpicola* KITAM. from mt. Tateyama, prov. Yetchiu. $\times 0.32$.



Fig. 2. 1. *Taraxacum platycephalum* DAHLST. from Odasamu, Saghalien. 2. *T. Chamissonis* GREEN from Insl. Shumushu, Kuriles. 3. *T. pseudo-Chamissonis* GREEN from mt. Daisetsu, prov. Ishikari. 4. *T. Tatewakii* H. Koidz. from Ishiyama, Saghalien. 5. *T. Tatewakii* KITAM. from Ishibaiyama, Saghalien. $\times 0.32$.

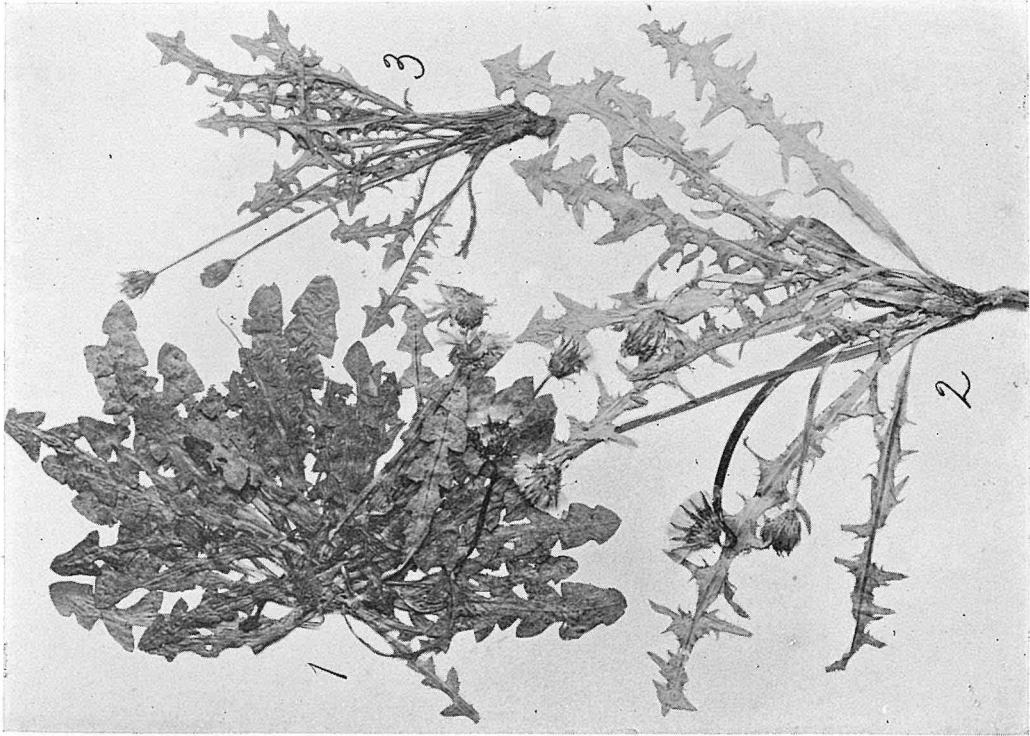


Fig. 5. 1. *Taraxacum formosanum* KITAM. from Tamsui, prov. Tai-hoku. 2. *T. Arakii* KITAM. from Higashi-Tokonoyama, prov. Tajima. 3. *T. hallatsanense* NAKAI from insl. Quelpaert. $\times 0.31$.



Fig. 4. 1. *Taraxacum Ohwianum* KITAM. from Seisui, prov. Kan-hoku. 2. *T. latifolium* KITAM. collected between Yengando et Joson, prov. Kanhoku. $\times 0.32$.

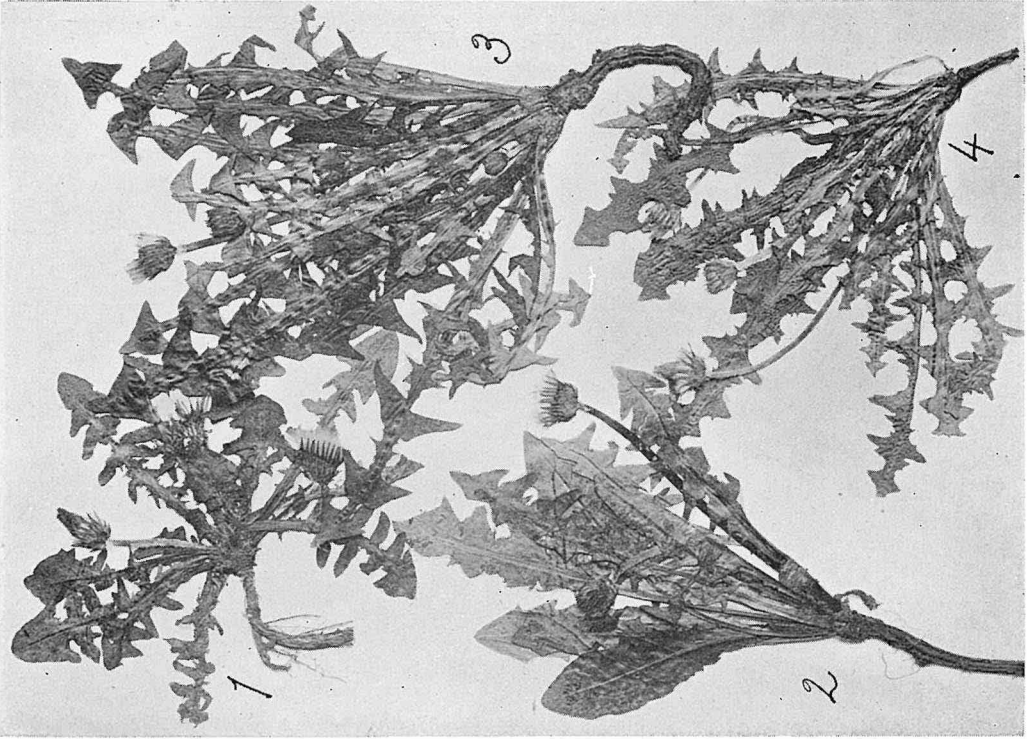


Fig. 7. 1. *Taraxacum hondoense* var. *leiophyllum* KITAM. from mt. Iwate, prov. Rikuchiu. 2. *T. hondoense* from Kirigamine, prov. Shinano. 3. *T. kiushianum* H. Koidz. from Minamiyamada, prov. Bungo. 4. *T. coreanum* NAKAI from Keijo, prov. Keiki. $\times 0.3$.

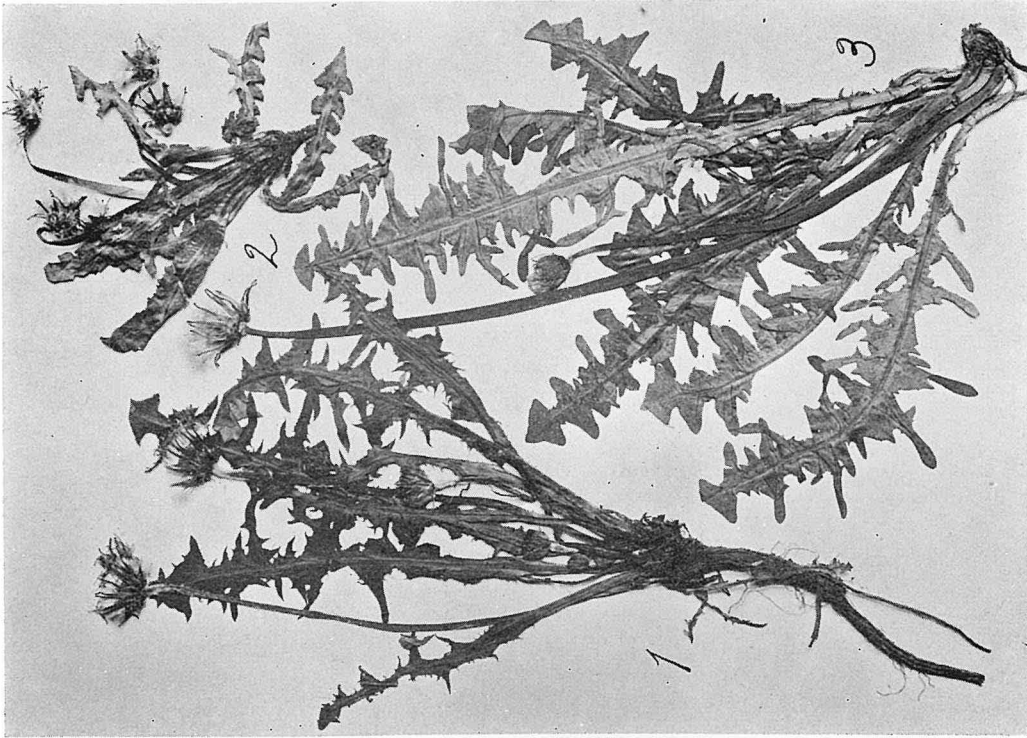


Fig. 6. 1. *Taraxacum platyepidum* DAHLST. from mt. Kongo, prov. Kogen. 2. *T. mongolicum* HAND.-Mzt. from Riiken, prov. Keinan. $\times 0.32$. 3. *T. elatum* KITAM. from Kawakami, prov. Ohmi.

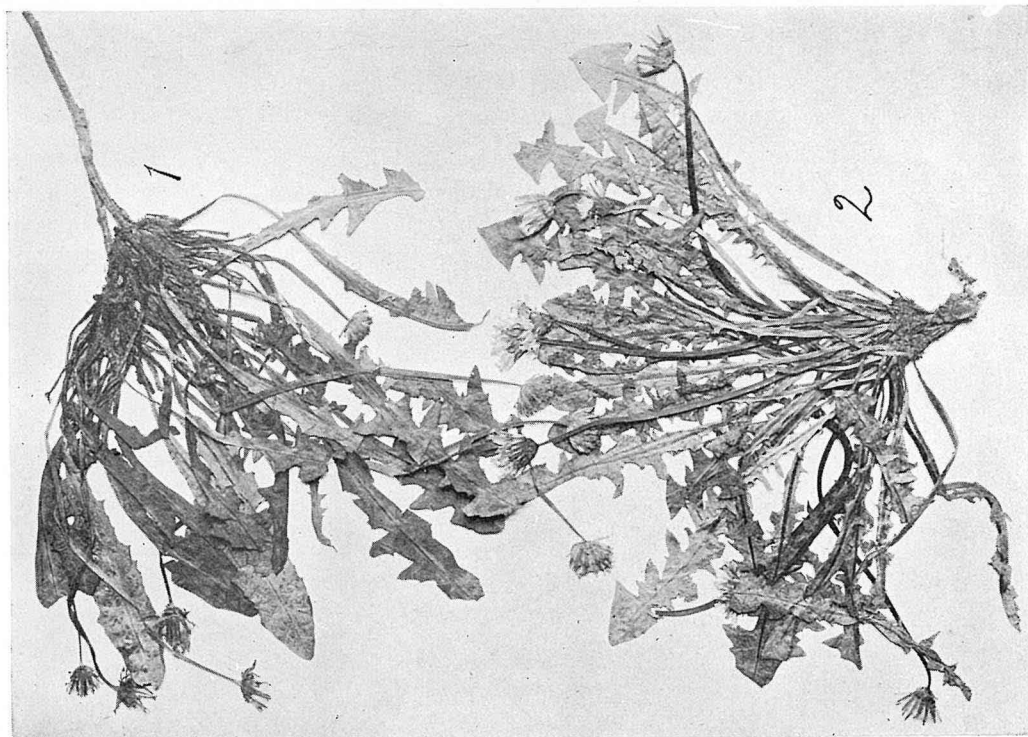


Fig. 9. 1. *Taraxacum long-appendiculatum* NAKAI from Hamanatsu, prov. Totomi. 2. *T. japonicum* Koidz. from Kyoto, prov. Yamashiro. $\times 0.32$.



Fig. 8. 1. *Taraxacum pectinatum* KITAM. from Onobe, prov. Bitchiu. 2. *T. ceratolepis* KITAMURA from Higashiyatamura, prov. Tamba. $\times 0.32$.

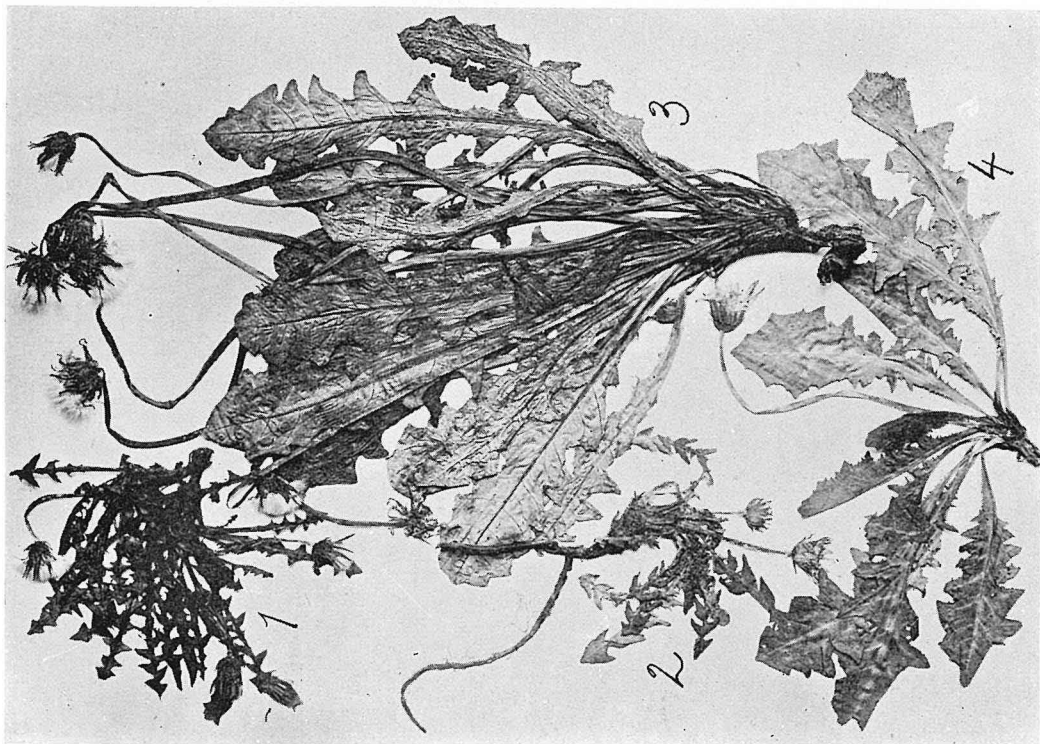


Fig. 10. 1. *Taraxacum kuzakense* KITAM. from Kadoma, prov. Rikuchiu. 2. *T. variabile* KITAM. from Myojindake, prov. Sagami. 3. *T. Maruyamanum* KITAM. from insl. Oki. 4. *T. platycarpum* DAHLST. from Shio, prov. Hitachi.

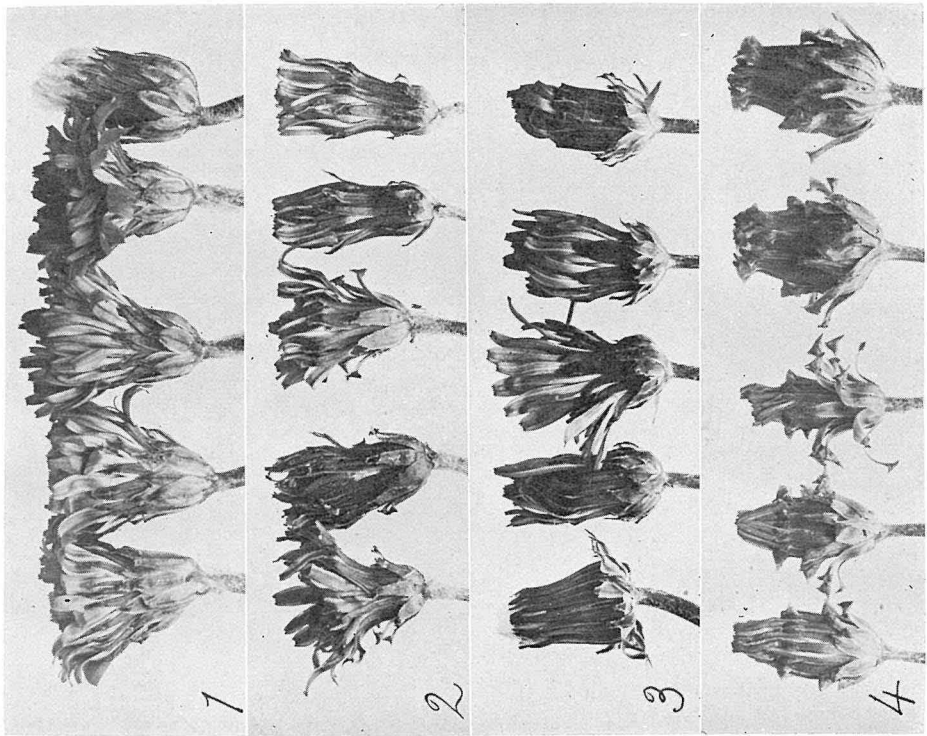


Fig. 11. 1. *Taraxacum platyepidum* DIELS from Shian, Saghalien. 2. *T. mongolicum* HAND.-MAZT. from Wangmaochen, Shansi, China. 3. *T. asiaticum* DAHLST. from Chapu, Shansi, China. 4. *T. longependiculatum* NAKAI from Ichinomiya, prov. Nagato.

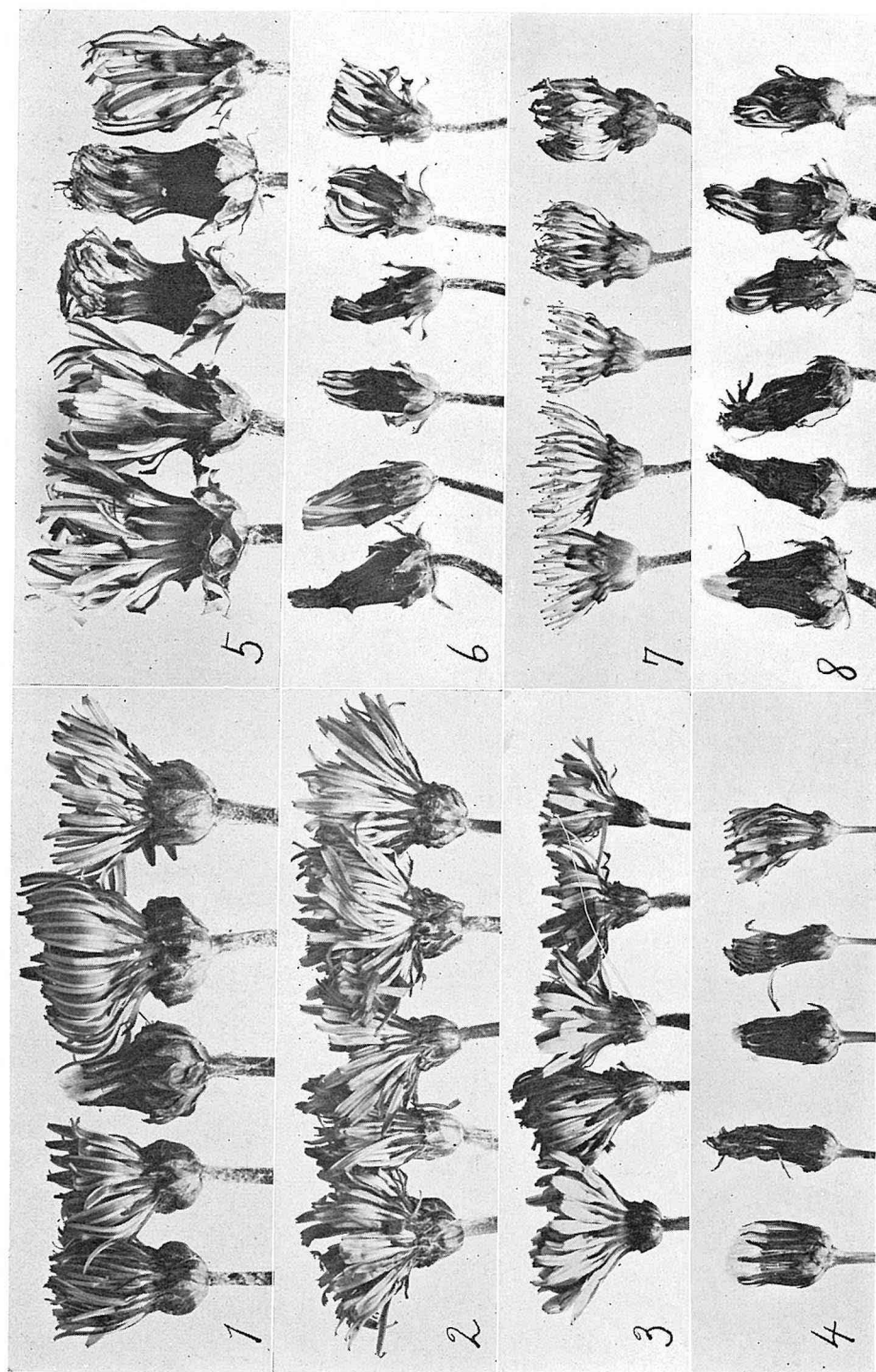


Fig. 12. 1. *Taraxacum honoense* NAKAI from Yakeyama, prov. Mutsu. 2. *T. honoense* var. *leiophyllum* KITAM. from mt. Iwate, prov. Rikuchiu. 3. *T. japonicum* KOIDZ. from Kyoto, prov. Yamashiro. 4. *T. Onuitanum* KITAM. from mt. Shoyo, prov. Keiki. 5. *T. albidum* DAHLST. from Kyoto, prov. Yamashiro. 6. *T. coreanum* NAKAI from Tokuson, prov. Keiki. 7. *T. platycarpum* f. *rubescens* KITAM. cultivated in Kyoto, prov. Yamashiro. 8. *T. shinanense* H. KOIDZ. from Sendai, prov. Rikuzen and from Morioka, prov. Rikuchu.