

assumes a direct migration inland, the plant becoming gradually accustomed to a decreasing salt-content of the water, and aquatic animals, birds, etc., being the agents by which dissemination up stream beyond the reach of the tide is accomplished.

Caloglossa Leprieurii has been made the subject of an able and detailed morphological monograph by the late Professor Cramer, of Zurich, based upon material from New York and Ceylon. It may be remarked incidentally that this plant is a most elegant object, from the pedagogical standpoint, for the demonstration and study of the development of a thallus from an apical cell.

A KEY TO THE NORTH AMERICAN SPECIES OF LACTARIUS—II^{*}

BY F. S. EARLE

SUBSECTION PIPERATI

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| 1. Milk white, changing to cream-color or yellow. | 2. |
| Milk white, unchanging. | 3. |
| 2. Pileus yellowish-white, tomentose; stipe solid, velvety. | <i>L. subvellereus</i> Pk. |
| Pileus yellowish flesh-color, spotted; stipe hollow, glabrous. | <i>L. chrysorrhoeus</i> Fr. |
| 3. Pileus white or whitish or tinted. | 6. |
| Pileus reddish-brown, 1–2.5 cm.; stipe white. | <i>L. parvus</i> Pk. |
| Pileus grayish-brown, with shades of lilac. | 4. |
| Pileus dark brown, fuliginous or umbrinous. | 5. |
| Pileus dark green, very acrid. | <i>L. atro-viridis</i> Pk. |
| 4. Lamellae distant, yellowish, not staining. | <i>L. pyrogalus</i> (Bull.) Fr. |
| Lamellae crowded, flesh-color, staining greenish. | <i>L. varius</i> Pk. |
| 5. Pileus convex-umbilicate, rivulose-floccose; stipe 2.5 cm. | <i>L. umbrinus</i> (Pers.) Fr. |
| Pileus infundibuliform, dry, not polished; stipe 3–8 cm. | <i>L. plumbius</i> (Bull.) Fr. |
| 6. Pileus villous or tomentose, at least on the margin. | 7. |
| Pileus glabrous. | 10. |
| 7. Lamellae crowded. | 8. |
| Lamellae distant. | 9. |
| 8. Pileus white, then orange, silky-villous. | <i>L. villosus</i> Clem. |
| Pileus white to pale ochraceous, glabrate, margin silky. | <i>L. involutus</i> Soppitt |
| 9. Pileus white, persistently tomentose; spores nearly smooth. | <i>L. vellereus</i> Fr. |
| Pileus white, often spotted, becoming glabrate; spores rough. | <i>L. deceptivus</i> Pk. |

* Continued from page 141.

10. Lamellae densely crowded, narrow. 11.
 Lamellae distant or subdistant, broader. 12.
11. Stipe long, 5-10 cm., slender, stuffed; lamellae horizontal. 13.
L. pergamenus (Swartz) Fr.
 Stipe short, 2-5 cm., thick, solid; lamellae arcuate. *L. piperatus* (Scop.) Fr.
12. Pileus thin, 3-7 cm., pure white. *L. albidus* Pk.
 Pileus thick, larger, reaching 15-20 cm., tinted flesh-color. 13.
13. Stipe short, 3-4 cm., solid. *L. flexuosus* Fr.
 Stipe long, 10-15 cm., hollow. *L. platyphyllus* Pk.

SECTION DAPETES

1. Milk blue. *L. Indigo* (Schw.) Fr.
 Milk some shade of red or yellowish-red. 2.
2. Pileus white, dry, velvety. *L. salamoneus* Pk.
 Pileus orange, zonate, viscid. *L. deliciosus* (L.) Fr.
 Pileus some shade of gray with blue, green or purple shades. 3.
3. Milk reddish-brown; flesh unchanging. *L. subpurpureus* Pk.
 Milk reddish-yellow; flesh changing to blue or green. *L. Chelidonium* Pk.

SECTION RUSSULARIA

1. Pileus viscid. 2.
 Pileus squamulose, tomentose or pruinose, at least when young. 4.
 Pileus polished, glabrous from the first. 16.
2. Milk white, changing to yellow. *L. thejogalus* (Bull.) Fr.
 Milk white, unchanging. 3.
3. Pileus 5-8 cm., reddish-brown or nearly cinnamon. *L. quietus* Fr.
 Pileus 6-15 cm., pallid, pale yellowish or reddish. *L. pallidus* (Pers.) Fr.
4. Milk white, changing to yellow; pileus brown. *L. subtomentosus* B. & Rav.
 Milk white, changing to red;* pileus pallid, pruinose. *L. fuliginosus* Fr.
 Milk white, unchanging. 5.
5. Lamellae distant. 6.
 Lamellae more or less crowded. 8.
6. Pileus fuliginous; lamellae white. *L. Gerardii* Pk.
 Pileus yellowish-red or yellowish-brown; lamellae yellowish. 7.
7. Pileus small, 4 cm., yellowish-red, pulverulent. *L. hygrophoroides* B. & C.
 Pileus larger, 5-10 cm., yellowish-brown, tomentose. *L. distans* Pk.
8. Pileus pruinose, not at all pubescent. 9.
 Pileus at first pubescent, then glabrate. 10.
 Pileus persistently pubescent or squamulose. 12.
9. Pileus milky brown then reddish-orange; stipe orange. *L. saccharinus* Johns.
 Pileus dull yellow; milk very abundant, staining the plant. *L. luteolus* Pk.
 Pileus fuliginous, plicate-rugose, 5 cm. or more. *L. lignyotus* Fr.
 Pileus fuliginous, plicate-rugose, 2.5 cm.; stipe only 4 mm. thick. *L. lignyotus tenuipes* Pk.

* *Lactarius lignyotus* in Europe is said to have milk turning reddish, but the American plants that have been referred to this species do not have this character.

10. Pileus infundibuliform, bay-red ; spores 6-8 μ . *L. rufus* Fr.
 Pileus plane or subdepressed, golden brown ; spores 8-10 μ . 11.
11. Pileus smooth, soon glabrate. *L. volemus* Fr.
 Pileus rugose-reticulate, especially on the margin. *L. volemus subrugosus* Pk.
12. Pileus rugose-reticulate, dark chestnut ; spores 10-12 μ . *L. corrugis* Pk.
 Pileus smooth, not rugose-reticulate. 13.
13. Stipe concolorous. 14.
 Stipe of a different color from the pileus. 15.
14. Pileus and stipe grayish-white, small, 1-4 cm. *L. griseus* Pk.
 Pileus and stipe reddish-allutaceous, larger, 8-15 cm. *L. aquisfluus* Pk.
15. Pileus grayish-brown, often violet-tinted, 2.5-8 cm.; stipe pallid, pubescent.
 hollow or stuffed. *L. glycyosmus* Fr.
 Pileus olivaceous, 2.5 cm.; stipe white, solid. *L. alpinus* Pk.
16. Stipe white ; pileus brown ; milk none [*Russula* ?].
L. illachrymans B. & Rav.
 Stipe concolorous or subconcolorous. 17.
17. Flesh white, changing to brownish flesh-color. *L. fumosus* Pk.
 Flesh not changing color. 18.
18. Stipe with white strigose hairs at base. *L. paludinella* Pk.
 Stipe glabrous or subpruinose. 19.
19. Pileus golden or golden brown ; stipe orange. *L. mitissimus* Fr.
 Pileus some shade of reddish-brown or chestnut. 20.
20. Milk scanty, color of watered silk ; stipe solid. *L. serifluus* (DC.) Fr.
 Milk white, not watery. 21.
21. Pileus hygrophanous, zonate when moist, azonate when dry, 5-10 cm.
L. mutabilis Pk.
 Pileus not hygrophanous. 22.
22. Pileus subzonate, aromatic, especially on drying. *L. camphorarius* (Bull.) Fr.
 Pileus azonate, not aromatic. 23.
23. Pileus reddish-brown, margin even ; stipe subpruinose. *L. subdulcis* (Bull.) Fr.
 Pileus bay-red, shining, margin inflexed, crenulate. *L. subdulcis badius* Gillet
 Pileus cinnamon-red, somewhat shining. *L. subdulcis cinnamomeus* Gillet
 Pileus dull chestnut-red. *L. subdulcis rufus* Gillet
- NEW YORK BOTANICAL GARDEN.

SOME NEW MEXICO PLANTS

BY T. D. A. COCKERELL

Astragalus simulans sp. nov.

Similar to *A. mollissimus* in general appearance and manner of growth. Leaves about 150 cm. long, pinnate, with 8-13 pairs of oval leaflets, about 14 mm. long and 8 broad, silvery on both



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