

Amanita smithiana Bas, *sp. nov.*—Figs. 143–145

Pileus 60–110 mm latus, convexus vel planus, margine appendiculatus neque sulcatus, albus, subviscidus, verrucis floccosis, subconicis vel planis, albis vel brunneolis ornatus. Lamellae subconfertae, liberae vel subadnatae, modice latae, albae vel cremeae. Stipes 100–180 mm longus, 10–30 mm latus, sursum attenuatus, basi subclavatus vel fusiformis,

EXPLANATION OF FIGURES 140–142

Figs. 140, 141. *Amanita rhopalopus* f. *rhopalopus*. — 140. Fruit-bodies. — 141. Section of volval wart from cap. (Fig. 140, after photograph of *Atkinson 3731*; 141, from type.)

Fig. 142. *Amanita rhopalopus* f. *turbinata*. — Fruit-body of type.

albus, valde lacerato-squamosus. Annulus parvus, lacerato-floccosus. Caro alba, odore ingrato. Sporae 11–12.5 × 7–8 μ , amyloideae. Fragmenta volvae cellulis diversis hyphisque composita. Fibulae frequentes. Typus: 'A. H. Smith 17501, 2 Oct. 1941, U.S.A., Washington' (holotypus, MICH; isotypus, L).

ETYMOLOGY: Named in honour of Dr. A. H. Smith, Ann Arbor.

Fruit-bodies (Fig. 143) medium to large, solitary or subgregarious. Cap 60–110 mm wide, hemispherical at first, then convex to plane, with non-sulcate, strongly appendiculate margin, white to whitish, subviscid to dry, decorated with white to pale brown, up to 3 mm wide and high, floccose, subconical warts or felted patches at centre, often passing towards margin into a thin flocculence broken up into scattered fragments. Gills rather crowded, narrowly adnate to free, rather broad, 6–10 mm wide, ventricose, white to cream, with flocculose, white edge; short gills truncate (the shortest) to attenuate (the longer). Stem 100–180 × 10–30 mm, somewhat tapering upward, with subclavate to fusiform bulb up to 45 mm wide, solid, white, strongly ragged-scaly, with floccose-fibrillose, mostly lacerate, apical ring and some vague, floccose-squamous zones derived from volva at upper part of bulb. Flesh white, rather soft. Smell faint, pungent.

Spores [30/3] (10.5–)11–12.5(–13.5) × 7–8 μ , length-breadth ratio 1.3–1.75 (averages 1.45–1.65), broadly ellipsoid to elongate, sometimes obovoid, thin-walled, with guttulate, refractive contents, amyloid (Fig. 145). Basidia 60–75 × 11–14 μ , 4-spored, with clamps. Marginal tissue a thin fringe of hyphae on which clavate cells 20–50 × 8–20 μ . Trama of gills bilateral, made up of hyphae 3–10(–15) μ wide, without terminal, inflated cells; subhymenium rather thin, ramose. Pileipellis near surface consisting of interwoven to subradial hyphae 2–6 μ wide, hardly colouring in alkaline solution. Remnants of volva on cap (Fig. 144) made up of abundant ellipsoid, subglobose and broadly clavate cells, 40–85 × 30–75 μ , terminal or in rows on abundant, branching hyphae 4–15 μ wide; arrangement of elements distinctly parallel and erect in warts at centre of young caps but rather loose and therefore becoming irregular with age; some oleiferous hyphae present; pale yellowish in alkaline solution. Trama of stem with terminal, upright, large, clavate cells. Floccose scales on stem consisting of large, elongate cells up to 150 μ long and 20 μ wide. Clamps present.

HABITAT & DISTRIBUTION.—Terrestrial in woods in the eastern U.S.A.

COLLECTIONS EXAMINED.—U.S.A.: Washington, Olympic Hot Springs, 2 Oct. 1941, A. H. Smith 17501 (holotype, MICH; isotype, L); Oregon, Mt. Hood National Forest, 25 Oct. 1946, A. H. Smith 24981 (MICH); 21 Oct. 1947, A. H. Smith 28106 (MICH).

OBSERVATIONS.—In the material available it is difficult to decide whether the floccose scales on the stem are derived from the outer layer of the stem, from the partial veil, or from the limbus internus of the volva. Judging by the microscopical structure of these scales the last mentioned solution seems the least probable.

On young caps the remnants of the volva have the shape of raised, floccose warts

EXPLANATION OF FIGURES 143–148

Figs. 143–145. *Amanita smithiana*. — 143. Fruit-bodies. — 144. Section of volval wart from near centre of cap. — 145. Spores. (All figs. from type; 143, after Smith's photograph.)

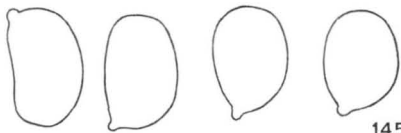
Figs. 146–148. *Amanita conicobulbosa*. — 146. Section of base of volval wart on cap. — 147. Dried fruit-body. — 148. Spores. (All figs. from type.)



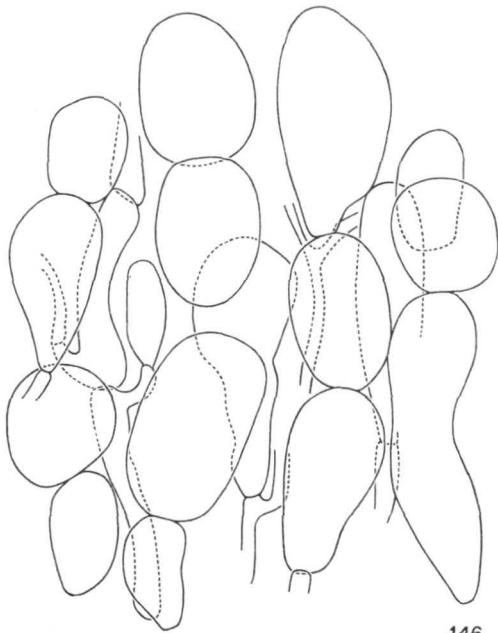
143



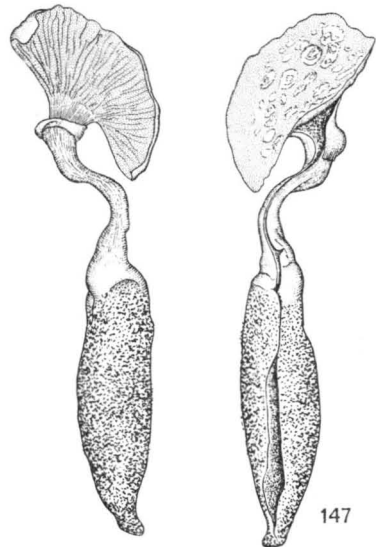
144



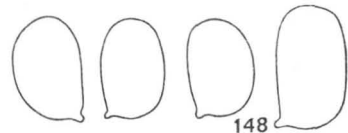
145



146



147



148

Figs. 143-148

and there is at that stage a more or less parallel, upright arrangement of the elements. But the tissue of the volva is rather loose and flattens easily to thin, felted patches when the caps expands.

Amanita smithiana occurs in the western U.S.A.; specimens are often referred to the names *A. solitaria* or *A. chlorinosma*. It differs clearly from *A. cokeri* (the East American '*A. solitaria*') by its lacerate, squamose-floccose stem, the poor ring and the rather loose tissue of the universal veil, which does not form compact, conical warts or scales on cap or stem. *Amanita smithiana* differs from the true *A. chlorinosma* by larger spores and a different, not powdery universal veil.

The plate published by Hotson (1936: fig. 3) under the name *A. solitaria* probably represents the present species.