

MYCOLOGICAL HERITAGE OF JOHANN BUXBAUM. 4. FUNGI DESCRIBED IN THE FOURTH “CENTURIA” ISSUE (1733). 2. LENTINOID SPECIES

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The present notice continues our acquaintance with the mycological heritage of Johann Christian Buxbaum (1693–1730). A total of 5 “Centuria” (sets of 100 species) under the title “Plantarum minus cognitarum centuria circa Byzantium et in Oriente observatos” were published by the St. Petersburg Academy of Sciences. In the fourth “Centuria” issue we can find descriptions and illustrations of 56 fungal species, among which there are two species of fungi of lentionoid morphotype considered in the present paper: 1) *Fungus arboreus mollis multiformis* and 2) *Fungus crassus, oris introflexis*. The analysis of descriptions and original drawings made it possible to correlate these descriptions with two modern taxa: 1) *Neolentinus lepideus* and 2) *N. cyathiformis* (*Basidiomycota, Agaricomycetes, Gloeophyllales, Gloeophyllaceae*). The nomenclature of these taxa is presented and their homogeneity and variability in the light of the modern data is estimated.

Keywords: *Agaricomycetes*, botanists of the 18th century, drawings of fungi, *Gloeophyllaceae*, morphology, *Neolentinus*, nomenclature

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The present notice continues our acquaintance with the mycological heritage of Johann Christian Buxbaum (1693–1730), a naturalist who was appreciated by Peter the Great, the first botanist-academician of the Saint Petersburg Academy of Sciences (Zmitrovich, Sytin, 2021a, 2021b, 2021c). Buxbaum brought the subjective experience and traditions of European floristics, botanical taxonomy and nomenclature into emerging Russian science, becoming a full member of the Saint Petersburg Academy of Sciences on earlier years of its formation (Sytin et al., 2021).

Within seminal works of Buxbaum, his “Centuria” draw a constant attention. A total of 5 “Centuria” (sets of 100 species) under the title “Plantarum minus cognitarum centuria circa Byzantium et in Oriente observatos” were published by the St. Petersburg Academy of Sciences.

In the first “Centuria” issue (1728a) we can find descriptions and illustrations of five fungal species: 1) *Agaricus barbatus flavescens* (*Hericium cirrhatum* in modern taxonomy), 2) *Agaricus gelatinosus, parte prona erinaceus* (*Hericium erinaceus*), 3) *Fungus erinaceus parvus in conis Abietis deiectis nascens* (*Auriscalpium vulgare*), 4) *Fungus parvus albus deiectis abietis nascens* (*Baeospora myosura*), 5) *Lycoperdon magnum globosum, pulpa granulata, radice crassa* (*Lycoperdon excipuliforme*). In the second “Centuria” (1728b) issue we can find descriptions and illustrations of 8 fungal species:

1) *Agaricus varii coloris, erinaceus* (*Hydnellum ferrugineum* in modern taxonomy), 2) *Agaricus Pectunculi forma, oblongus luteus* (*Tapinella panuoides*), 3) *Lycoperdon stellatum, calyce inverso* (*Geastrum fimbriatum*), 4) *Fungus pileo plicatili, maior* (*Coprinopsis lagopus*), 5) *Fungus parvus pileolo plicatili, cinereus, oris crenatis* (*Parasola* sp.), 6) *Fungus plicatilis omnium minimus, albicans* (*Coprinopsis cordispora* species complex), 7) *Fungus parvus, infundibulum referens* (obviously, *Arrhena obscurata*), and 8) *Fungus exiguus albicans capitulo, striato* (*Coprinellus disseminatus*). In the third “Centuria” issue (Buxbaum, 1729), there were no fungal species at all, when the coralloid forms here belonged to the marine algae: *Phaeophyceae* (*Ochrophyta, SAR*) and corallinaceous *Rhodophyta* (*Archeplastida*).

The fourth “Centuria” issue (Buxbaum, 1733), on the contrary, is mainly devoted to fungal species (*Ascomycota, Basidiomycota – Opisthokonta*) along with some dicotyledonous species (*Embryophyta, Archeplastida*). Wonderful illustrations and descriptions of 56 fungal species we can find here. The book was typed in the Caslon font, a peculiarity of which is that the Latin literas *s* and *f* were almost identical in spelling and only into the whole word we can distinguished them. Instead of the preposition “et”, an ampersand sign was used, and the digraph *ae* was typed as a single litera. Each paragraph was opened with the two-level capital fonts.



Fig. 1. Engraving from drawing to Buxbaum's "Centuria" IV (Buxbaum, 1733) published within a book tables: 1 – *Fungus arboreus mollis multiformis* (*Neolentinus lepideus* in modern taxonomy); 2 – *Fungus crassus, oris introflexis* (*Neolentinus cyathiformis* in modern taxonomy).

Due to impossibility of coverage all these species in one paper, our previous report was dedicated to the clavarioid taxa, which Buxbaum himself designated with the generic epithet *Coralloides* [1] *Coralloides minor cristata* (*Clavulina coralloides*), 2) *Coralloides clavata, lutea, minor* (*Beauveria* cf. *scarabaeidicola*), 3) *Coralloides lutea, non ramosa, clava rugosa* (*Macrotyphula fistulosa/contorta*) (Sytin, Zmitrovich, 2021c), whereas in this notice we'll restrict ourselves to wood-inhabiting fungi of so-called lentinioid morphotype, characterized by the consistency transitional to that of tinder-like polypores and the gills descending along a slightly eccentric stipe. Only two of such species there are in the fourth "Centuria" issue. The analysis of species descriptions follows here.

1. *Fungus arboreus mollis multiformis* – p. 15, tab. XXV (Fig. 1, 1)¹.

"Arborius adnascitur substantia terrestrium est, colore, magnitudine, et forma multum ludit. Communiter capitellum lamellatum insidet pediculo, ad latus ejus sito, aliquando pediculo caret, vel perbreve obtinet, qui raro eius medio inferitar ad modum terrestrium. Color albidus est, et aliquando fuligine tinctus. Mihi videtur multum accedere ad fungos campestris: forsitan idem est, et differentia foli loco natali debetur; quando scilicet ex lingo crescit, monstrosus evadit, et variis formis ludit. Aliis ulteriorem inquisitionem relinquo. Hac occasione etiam monemus, Fungum medi-

um pileo mucro aerugini coloris obducto ejusdem Doodii² videri Fungum silvarum asperum esculentum I. seu ex albo virescentem J.B.³ qui est tertia species Fungi umbilicum referentis, variegata C.B.⁴ Hic saepius post pluvias mucro viscid obductus occurrit: nec locus natalis repugnant".

Current status. As somewhat peculiarity of Buxbaum's works, the absence of clear description stereotype should be mentioned, therefore, in the case when the species is highly characteristic in its drawing transmission, the textual description does not duplicate, but often supplements the features slipped away in the figure. In particular, for the species in question, an emphasis into description was made on wide intraspecies polymorphism and on synanthropic aspect of species ecology. The coloration features described as well as highly characteristic species habitus, accurately conveyed in a wonderful drawing (in particular, pronounced pileus asymmetry, coarse scales and gills, thick scaly stipe), together with an important textual information, unequivocally say that we are dealing with *Neolentinus lepideus* (*Basidiomycota*, *Agaricomycetes*, *Gloeophyllales*, *Gloeophyllaceae*).

Post-Linnean synonymy: *Neolentinus lepideus* (Fr.) Redhead et Ginns, *Trans. Mycol. Soc. Japan* 26 (3): 357, 1985. ≡ *Agaricus lepideus* Fr., *Observ. Mycol.* 1: 21, 1815. ≡ *Lentinus lepideus* (Fr.) Fr., *Epicr. Syst. Mycol.*: 390, 1838. = *Agaricus tubaeformis* Schaeff., *Fung. Bavar. Palat. Nasc.* 4: 65, 1774. = *A. cyprinus* Batsch, *Elench. Fung.*: 57, 1783. = *A. serpentiformis* Batsch, *Elench. Fung.*: 89, 1783. = *Ramaria ceratoides* Holmsk., *Beata Ruris Otia Fungis Danicis* 1: 101, 1799. = *Agaricus suffrutescens* Brot., *Fl. Lusit.* 2: 466, 1805. = *A. polymorphus* Pers., *Mycol. Eur.* 3: 52, 1828. = *Lentinus sitaneus* Fr., *Syn. Generis Lentinorum*: 8, 1836. = *L. cryptarum* Fuckel, *Jb. Nassau. Ver. Naturk.* 23–24: 15, 1870. = *L. contiguus* Fr., *Hymenomyc. Eur.*: 482, 1874. = *L. maximus* A.E. Johnson, *Bull. Minn. Acad. Nat. Sci.* 1: 338, 1878. = *L. gallicus* Quéll., *C. R. Assoc. Franç. Avancem. Sci.* 13: 280, 1885. = *L. domesticus* P. Karst., *Revue Mycol.* 9 (33): 9, 1887. = *L. magnus* Peck, *Bull. Torrey Bot. Club* 23 (10): 413, 1896. = *L. platensis* Speg., *Anal. Mus. Nac. Hist. Nat. B. Aires* 6: 113, 1899. = *L. spretus* Peck, *Bull. N.Y. St. Mus.* 105: 24, 1906.

Modern elaborations: Pegler (1983); Redhead, Ginns (1985); Bondartseva et al. (2016).

Note. Although the recent molecular work was focused on lentinioid *Polyporaceae* (Zmitrovich, Kovalenko, 2016), some *Neolentinus* taxa were included in molecular phylogenetic trees too, and in the light of these data the *N. lepideus* clade revealed the subtlest di-

² Rembert Dodoens, *Histoire des plantes, en laquelle est contenue la description entière des herbes... non seulement de celles qui croissent en ce païs, mais aussi des autres estrangères qui viennent en usage de médecine*, 1557.

³ Johann Bauhin, *Historia plantarum universalis...*, 1650–1651.

⁴ Caspar Bauhin, *Theatrum Botanicum*, 1658.

¹ The references to the figures into the present paper are given in brackets.

vergence, in particular, *N. lepideus* f. *rufescens* (A.N. Petrov) Zmitr. et Kovalenko seems to be slightly stood out. However, in terms of nomenclature, the Buxbaum's polynomial base (*arboreus*) seems unlikely to help in naming any split off species so far, since he covered with this name whole the species polymorphism spectrum known in those times.

2. *Fungus crassus, oris introflexis* – p. 16, tab. XXVI, (Fig. 1, 2).

“Colorem hujus non melius comparare possum quam stercoři humano, superne capitulum subhirsutum ad fuscadinem vergit lamellae magis lutescunt substantia interior partier lutea et compacta. Lamellae partem pediculi occupant, et antiquior infundibuliformis evadit. In pascuis passim. An Fungi pediculo bulbosa J.B.? quorum description huic aliquatenus convenit”.

Current status. The original drawing well conveys a typical form of this fungus, whereas the description adds some typical characters by which the species can be unmistakably identified. Like a previous species, the consistency is described as dense, while it was said that surfaces yellowing can be observed. By this character, we can understand that we dealing with not the *Panus* Fr., but the *Neolentinus* representative, too. The pileus surface of the fungus was described as subhirsute, but such a characteristic covers also ingrown fibrous surface giving very fine scaling. The basic coloration can be interpreted in a range from hazel to wine (except with aforementioned yellow pigment). As typical basidiome features would be mentioned, e.g. cyathiform shape, decurrent gills (described in the text and seen in the drawing), thick and somewhat compressed stipe. Undoubtedly, we are dealing with *Neolentinus cyathiformis* (*Basidiomycota*, *Agaricomycetes*, *Gloeophyllales*, *Gloeophyllaceae*).

Post-Linnean synonymy: *Neolentinus cyathiformis* (Schaeff.) Della Magg. et Trassin., *Index Fungorum* 171: 1, 2014. ≡ *Agaricus cyathiformis* Schaeff., *Fung. Bavar. Palat. Nasc.* 4: 66, 1774. = *A. schaefferi* Weinm., *Hym. à Gast. Imp. Ross. Obs.*: 665, 1836. = *Panus urnula* Fr., *Monogr. Hymenomyc. Suec.* 2 (2): 348, 1863. = *Lentinus degener* Kalchbr. in Fr., *Hymenomyc. Eur.*: 482, 1874. = *L. variabilis* Schulzer ex Quél., *Enchir. Fung.*: 150, 1886.

Modern elaborations: Pegler (1983); Redhead, Ginns (1985); Vlasenko et al. (2019).

Note. Judging by rather strong and, by the standards of intraspecific polymorphism of this taxon, not so long stipe, the Buxbaum's *Fungus crassus*... corresponds to *Lentinus degener* Kalchbr. in Fr., a recently epytypified taxon (Papp, Dima, 2018). Obviously, despite the wide modification variability, the species complex is hidden here, i.e. this is a promising taxon for further elaboration.

The following notices are planned to be devoted to the rest agaricoid fungi described in the fourth “Centuria” issue.

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Сытин А.К., Андреев М.П., Бондарь Л.Д. и др. (Sytin et al.)

Первая монография первого академика ботаники Петербургской академии наук Иоганна Христиана Буксбаума (к 300-летию со времени выхода в свет “Enumeratio plantarum assurgator in agro Hallensi crescentium” и прибытия ее автора в Петербург (1721)) // Ботанический журнал. 2021. Т. 106. № 12. С. 1230–1240.

Микологическое наследие Иоганна Буксбаума. 4. Грибы, описанные в четвертой “Центурии” (1733). 2. Лентиноидные виды

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Статья продолжает знакомство с микологическим наследием Иоганна Христиана Буксбаума (1693–1730), связанным в основном с изданием этим автором “сотниц” видов – “Центурий”. Всего Санкт-Петербургской академией наук было издано 5 «Центурий» (наборов из 100 видов) под названием “Plantarum minus cognitarum centuria circa Byzantium et in Oriente observatos”. В четвертом выпуске “Центурии” можно найти описания и иллюстрации 56 видов грибов, среди которых два вида грибов лентиноидного морфотипа, рассматриваемых в настоящей статье: 1) *Fungus arboreus mollis multiformis* и 2) *Fungus crassus, oris introflexis*. Анализ описаний и оригинальных рисунков позволил соотнести эти описания с двумя современными таксонами: 1) *Neolentinus lepideus* и 2) *N. cyathiformis* (*Basidiomycota, Agaricomycetes, Gloeophyllales, Gloeophyllaceae*). Представлена номенклатура этих таксонов и оценены их гомогенность и вариабельность в свете современных данных.

Ключевые слова: ботаники XVIII в., морфология, номенклатура, рисунки грибов, *Agaricomycetes, Gloeophyllaceae, Neolentinus*