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# Ethnobiological Study of Svaneti Fungi and Lichens: History of Research, Diversity, Local Names and Traditional Use

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**Abstract:** Research about macro-fungi of Svaneti, a historical province of Georgia, started in the 1920<sup>th</sup> with a botanical expedition of R. Singer, under the auspices of the National Museum of Vienna. At present about 400 species of macro-fungi are known for Svaneti, 67 of which are edible (and used for food in Georgia), and 27 are poisonous. The history of Svaneti lichen research started with analysis of the material collected by H. Lojka and M. Dechy in 1884-1885 made by E. Vainio. As of now, 250 species of lichens are known for the region. In the present study ethnobiological interviews on Svaneti macro-fungi and lichens were conducted in 16 villages of Svaneti. Our analysis shows that the local population uses mainly 22 species of mushrooms for food, 10 of which are used most frequently: *Armillaria mellea* (Vahl) P. Kumm., *Agaricus arvensis* Schaeff., *A. campestris* L., *Cantharellus cibarius* Fr., *Lactarius piperatus* (L.) Pers., *L. deliciosus* (L.) Gray, *Macrolepiota excoriata* (Schaeff.) Wasser, *M. procera* (Scop.) Singer, *Ramaria flava* (Schaeff.) Quel. A comparison of the vernacular names given in the literature and mentioned in the interviews collected during the present study shows that the population of Svaneti must have had better knowledge of mushrooms in the past. This is evidenced by a much higher number of local names in literature: of about 50 vernacular names of particular species or groups of fungi found in the literature, only 12 are still used by the population. This paper presents various uses of macro-fungi in Svaneti as quoted in literature and based on interview data. Lichens, particularly, *Usnea* and *Bryoria* species, as well as *Ramalina thrausta* (Ach.) Nyl. are called “Pimpa” or “Pimpous” and “Chach”. The only use of these species was by hunters as field-bedding to keep warm in the cold winters. In addition, we describe in the present paper how fungi and lichen uses were reflected in the local folklore.

**Keywords:** Macro-Fungi, Lichens, Ethnobiology, Georgia, Caucasus

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## 1. Introduction

The first data on fungi of Svaneti, a historical province of Georgia, were published by R. Singer [1], who visited Svaneti in 1929 within the framework of a botanical expedition organized by the National Museum of Vienna. His paper provides a list of 95 species of macro-fungi found in Svaneti. Later the mycological investigation of the province was continued by I. Nakhutsrishvili (Agaricales s.l.) [2], V. Gulmagarashvili (Polyporales) [3], T. Anchabadze

(Discomycetes) [4]. Based on current literature (mainly, [5]), and herbarium data, about 400 species of macro-fungi are known from Svaneti at present, of which 67 are edible (used for food in Georgia) and 27 are poisonous.

The history of Svaneti lichen research started with [6], listing 76 taxa, based on the analysis of the material collected by H. Lojka and M. Dechy in 1884-1885. Reference [7] mentions 26 taxa based on collections by S. Sommier and E. Levier. Reference [8] mentions a single species from material collected by F. Filarszky, reference [9] – two species, and reference [10] – 56 taxa identified from the collection of D.

Sosnovsky. Later research was continued by Tz. Inashvili in 1975-1977. At present 250 species of lichens are known from Svaneti.

No specific studies were, however conducted on the

ethnobiology of the fungi (macro-fungi) and lichens of Svaneti and generally Georgia so far. However, vernacular names with descriptions of fungi and in some cases their use are present in a number of dictionaries [11-17].

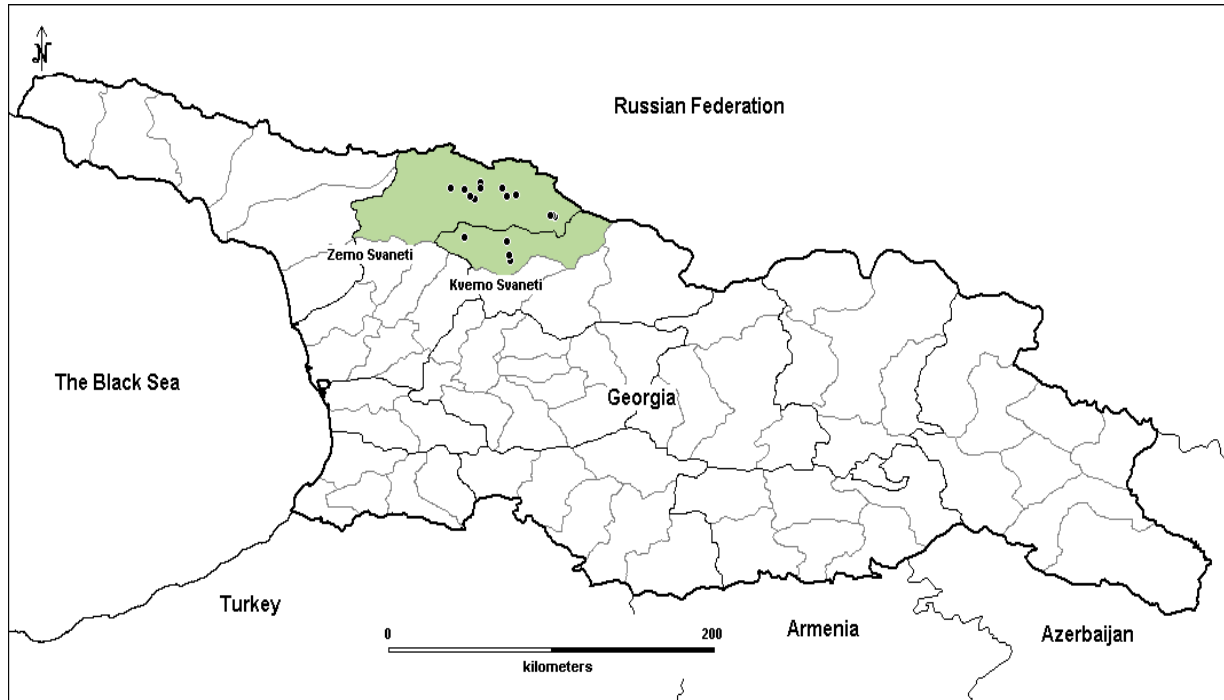


Figure 1. Schematic map of the study area. The territory of Svaneti is colored and the villages where the interviews were collected are shown as black circles.

## 2. Study Area

### 2.1. Location

Svaneti is a historical province of Georgia, located on the south-facing macro-slope of the western part of the Greater Caucasus. Svanetis Kavkasioni, a part of the Main Watershed Range of the Greater Caucasus, creates the natural northern border of Svaneti between Gvandra and Mt. Pasismta. From the west the region is bordered by the Kodori and Akibo ranges, from the south-west by the rivers Bordjali and Gandishis-Ghele, both tributaries of the river Enguri, as well as by the Bokunstha range. From the east Svaneti is bordered by the northern part of Lechkhumi range, and from the south by the southern part of the same Lechkhumi range, and the eastern part of Egrisi range. The Svaneti range divides the region into two depressions: Zemo (Upper) Svaneti and Kvemo (Lower) Svaneti creating a watershed between the Enguri and Tskhenistskali basins. The region has an altitudinal gradient from 800-4,500 m a.s.l. [18, 19].

### 2.2. Administrative Division

Administratively Zemo Svaneti belongs to Mest'ia municipality (with an area of 3,045 km<sup>2</sup>), which is part of the Samegrelo-Zemo Svaneti Region (Mkhare) and includes Mest'ia, as its administrative center, and 134 villages of 16 communes: Becho, Ch'uberi, Etseri, Idliani, Ipari, Kala, Khaishi, Latali, Lakhamula, Lenjeri, Mulakhi, Nakra, Pari,

Tskhumari, Ts'virimi, and Ushguli. Kvemo Svaneti is part of Lentekhi municipality (with an area of 1,344 km<sup>2</sup>) and belongs to the Racha-Lechkhumi-Kvemo Svaneti Region (Mkhare). It includes the settlement Lentekhi as administrative center, and 59 villages of seven communes: Chikhareshi, Choluri, Kheledi, Khopuri, Rtskhmeluri, Tsana, and Zhakhunderi [20] (fig. 1).

Svaneti is a historical province of Georgia, located on the south-facing macro-slope of the western part of the Greater Caucasus. Svanetis Kavkasioni, a part of the Main Watershed Range of the Greater Caucasus, creates the natural northern border of Svaneti between Gvandra and Mt. Pasismta. From the west the region is bordered by the Kodori and Akibo ranges, from the south-west by the rivers Borjali and Gandishis-Ghele, both tributaries of the river Enguri, as well as by the Boq'unsta range. From the east Svaneti is bordered by the northern part of Lechkhumi range, and from the south by the southern part of the same Lechkhumi range, and the eastern part of Egrisi range. The Svaneti range divides the region into two depressions: Zemo (Upper) Svaneti and Kvemo (Lower) Svaneti creating a watershed between the Enguri and Tskhenists'q'ali basins. The region has an altitudinal gradient from 800-4,500 m a.s.l. [18, 19].

### 2.3. Climate

The whole western Greater Caucasus experiences the influence of the Black Sea and moist westerly winds. The mean temperature of the warmest months (July-August) in

Svaneti decreases from +22°C at relatively low altitudes to +7°C –1°C above 3,200 m a.s.l.; and the mean temperature of the coldest month (January) from +10°C to –30°C –35°C. The annual precipitation is 1,500-2,000 mm [21].

#### 2.4. Vegetation Cover

The vegetation of the region includes mountain forest, subalpine, alpine, subnival and nival zones and corresponds to the West Caucasian, i.e. Colchic, type of the vegetation vertical zonation [19, 22].

#### 2.5. Population and Local Language

The region has a population of about 24,000 people; 99% of the population are Georgians [20]. Most inhabitants speak both Georgian and Svanetian. The Svanetian language belongs to the Kartvelian<sup>1</sup> group of the Iberian-Caucasian family of languages (there are several Kartvelian languages: Georgian, Zanian (Megrelian, Chanian) and Svanetian), and Svanetian is considered an old branch of the Proto-Kartvelian language. Nevertheless, it still has common basics and grammar structures with Georgian-Zanian languages; archaisms conserved in Svanetian are very important for linguistics. Svanetian does not have written language – historically the common colloquial language for all the Georgian tribes as well as formal language in the Georgian State(s) was Georgian – but rich Svanetian folklore provides sufficient material for linguistic research. The Svanetian language has four dialects: Balszemouri and Balskvemouri in Zemo Svaneti, and Lashkhuri and Lentekhuri in Kvemo Svaneti. In Kvemo Svaneti some researchers distinguish the third dialect, Choluruli, which is very close to Lashkhuri. Each of the listed dialects is only used in small groups of villages in Svaneti [23].

### 3. Methods

Research was conducted in July 2014. After obtaining prior informed consent for interviews, semi-structured interviews were conducted with participants in local villages.

Vernacular names provided by the respondents were analyzed in parallel to the names given in the dictionaries listed above.

Georgian names are transliterated according to a Romanization system for Georgian approved by US Board on Geographic Names (BGN)/Permanent Committee on Geographical Names (PCGN) 2009 Agreement.

Fungi and lichen species mentioned in the present paper are documented by collections stored at TBI; collection numbers of specimens from Svaneti are given in table 1 for each species. Species nomenclature follows [24].

### 4. Results and Discussion

Ethnobiological interviews were collected in 16 villages of

Zemo Svaneti (Mest'ia, Ebut'i, Ieli, Labsq'aldi, Lakhmula, Mazeri, Tskhek'vani, Ts'virimi, T'viberi, Ushguli: Zhvibiani, Chvibiani and Murq'meli); and Kvemo Svaneti (Babili, Gvimbrala, Khopuri, Mananauri) (fig. 1).

#### 4.1. Fungi

##### 4.1.1. Mushrooms Used for Food

According to literature [2, 5, 25, 26] and herbarium data, 67 species of mushrooms use for food in Georgia occur in Svaneti (Table 1). Our analysis of interviews collected in Svaneti shows that the local population uses mainly 22 species of mushrooms for food, 10 of which are used most frequently: *Armillaria mellea* (Vahl) P. Kumm., *Agaricus arvensis* Schaeff., *A. campestris* L., *Cantharellus cibarius* Fr., *Lactarius piperatus* (L.) Pers., *L. deliciosus* (L.) Gray, *Macrolepiota excoriata* (Schaeff.) Wasser, *M. procera* (Scop.) Singer, *Ramaria flava* (Schaeff.) Quel. Morphologically similar species are often referred to by the same vernacular name, e.g. mushrooms morphologically close to *Boletus* s.l. are all called “Khortsasok'o” or “Dumasok'o”, *Agaricus* spp. as well as *Macrolepiota* spp. are called “Kamasok'o”.

The local population interviewed recognized mushrooms to different degrees: 90-100% of the respondents recognized and used *Armillaria mellea* and *Lactarius piperatus*; 70-80% recognized and used *Agaricus arvensis*, *A. campestris*, *Cantharellus cibarius*, *Macrolepiota excoriata*, *M. procera*, *Ramaria flava*, *Lactarius deliciosus*; 30-60% – *Amanita caesarea* (Scop.) Pers., *Pleurotus cornucopiae* (Paulet) Rolland, *P. ostreatus* (Jacq.) P. Kumm., *Polyporus squamosus* (Huds.) Fr., *Boletus* s.l., and less than 25% – *Coprinopsis atramentaria* (Bull.) Redhead, Vilgalys & Moncalvo, *Bovista* spp., *Calvatia* spp., *Lycoperdon* spp., etc. Collectors paid major attention to the fruit-body shape, color and smell. They also considered brightly colored and / or pungent smelling mushrooms as well as unusually shaped ones as suspicious. Almost all mushroom species with white caps were considered “Kamasok'o”, which is the major Georgian name for *Agaricus* species. This perception of local collectors often causes confusion of *Agaricus* with *Amanita* species, which leads to poisoning incidents with frequent lethal outcome. In some cases the death of whole families was mentioned by the respondents. Local custom responded to this problem by elaborating a kind of “safety test” for mushrooms when eating them and this custom is described in the local folklore: the mushroom dish was first eaten by the oldest member of a family together with a glass of vodka. If the mushroom appeared safe, the dish was then eaten by the other members of the family. This “test” unfortunately does nothing to avoid *Amanita* poisoning, which might manifest itself only days after ingesting the mushrooms. *Armillaria mellea* and *Lactarius piperatus* were considered the safest among the fungi. These species were both eaten freshly collected, and dried or salted (by an ordinary technique) for winter use. In Svaneti mushrooms are mainly roasted, stewed or used for “K'ubdari”<sup>2</sup> filling; soups are not prepared of mushrooms. Caps of some species, e.g. *Lactarius deliciosus* and *Macrolepiota* spp. were eaten raw by

<sup>1</sup>“Kartveli” means “the Georgian” in the Georgian language.

<sup>2</sup>“K'ubdari” is a Svanetian pie with beef filling.

shepherds.

Table 1. Edible Fungi Occurring in Svaneti

Scientific Name (Collection Nos.)	Major Georgian names according to the literature	Names mentioned in the interviews	Number of respondents who mentioned the species	Season	Habitat; Substrate
<i>Agaricus arvensis</i> Schaeff.* (TBI5010029)	Mindvris kama	Kama	72	Jul-Oct	Meadows; Manure, soil
<i>Agaricus campestris</i> L.* (TBI5010030)	Mdelos kama	Kama	72	Jul-Oct	Grassy areas; Manure, soil
<i>Agaricus silvaticus</i> Schaeff. (TBI5010031)	Tq'is kama		0	Aug-Sep	Coniferous forest; Soil
<i>Amanita caesarea</i> (Scop.) Pers.* (TBI5009282)	Niq'vi	Neq'v	28	Jul-Oct	Primarily oak forest; Soil
<i>Amanita fulva</i> Fr. (TBI5009283)	Ts'ablisperi livliva		0	May-Oct	Forest; Soil
<i>Amanita rubescens</i> Pers. (TBI5009310)	Marts'q'vio		0	Jul-Oct	Forest; Soil
<i>Amanita vaginata</i> (Bull.) Lam. (TBI5009296)	Rukhi livliva		0	Jul-Oct	Forest; Soil
<i>Armillaria mellea</i> (Vahl) P.Kumm.* (TBI5009311)	Manch'k'vala	Manch'k'varai	85	May-Nov	Primarily beech forest; Trunks and stumps
<i>Boletus edulis</i> Bull.* (TBI5009295)	Datvis sok'o	Khortsa	33	Aug - Oct	Forest; Soil
<i>Boletus erythropus</i> Pers.* (TBI 5009316)	Ts'itelpekha mukhisdzira	–	33	Aug-Nov	Primarily oak forest; Soil
<i>Bovista nigrescens</i> Pers.* (TBI5009323)	Shavi pshuk'una	K'ok'oshol	9	Aug-Nov	Pastureland; Soil
<i>Bovista plumbea</i> Pers.* (TBI5010007, TBI5010008, TBI5009125, TBI5009126)	T'q'viisperi pshuk'una	K'ok'oshol	9	Aug-Nov	Pastureland; Soil
<i>Calvatia candida</i> (Rostk.) Hollós* (TBI5010002)	Tetri tavak'a	Chazhi pu	5	Aug-Nov	Pastureland; Soil
<i>Calvatia gigantea</i> (Batsch) Lloyd* (TBI5009322)	Giganturi pshuk'una	Chazhi pu	4	Jun-Sep	Subalpine meadow; Soil
<i>Cantharellus cibarius</i> Fr.* (TBI5009301)	Miklio	Miklio, Kat-nmiskonai	53	Jun -Nov	Primarily coniferous forest; Soil
<i>Chlorophyllum rachodes</i> (Vittad.) Vellinga (TBI5010040)	Rbilobts'itela ts'erosts'viva	–	0	Jul -Oct	Coniferous forest; Soil
<i>Chroogomphus rutilus</i> (Schaeff.) O.K.Mill. (TBI5010036)	Ts'iteli lorts'ovana	–	0	Jun -Nov	Pine forest; Soil
<i>Clitocybe nebularis</i> (Batsch) P. Kumm. (TBI5009309)	Mindvris sok'o	–	0	Aug-Nov	Forest edges; Soil
<i>Clitopilus prunulus</i> (Scop.) P. Kumm. (TBI5009288)	Alublisdzira	–	0	Jun-Sep	Primarily around Prunus spp.; Soil
<i>Coprinellus micaceus</i> (Bull.) Vilgalys, Hoppole & Jacq. Johnson (TBI 5009337)	Mglis sok'o	–	0	May-Nov	Broad-leaved forest; Soil around stumps
<i>Coprinopsis atramentaria</i> (Bull.) Redhead, Vilgalys & Moncalvo* (TBI 5009351)	Silio	Kokodil	6	May-Nov	Grassland, deciduous forest; Soil, buried dead wood
<i>Cortinarius violaceus</i> (L.) Gray (TBI 5009361)	Lurjana	–	0	Jul -Oct	Forest; Soil
<i>Craterellus cornucopioides</i> (L.) Pers. (TBI 5009333)	Dzabra sok'o	–	0	Aug-Nov	Primarily beech forest; Soil
<i>Fistulina hepatica</i> (Schaeff.) With. (TBI 5009365)	Ghvidzla sok'o	–	0	Aug - Oct	Primarily oak forest; Dead wood
<i>Flammulina velutipes</i> (Curtis) Singer (TBI 5009344)	Zamtris sok'o	–	0	Sept - Dec	Primarily on Populus; Dead wood
<i>Gomphidius glutinosus</i> (Schaeff.) Fr. (TBI 5009197)	Nadzvnaresbis lorts'ovana	–	0	Aug - Oct	Primarily spruce forest; Soil
<i>Hericiium coralloides</i> (Scop.) Pers. (TBI 5009183)	Irmis bats'ara	–	0	Aug - Oct	Primarily beech forest; Dead wood
<i>Hericiium erinaceus</i> (Bull.) Pers. (TBI5010032)	Gula sok'o	–	0	Aug - Oct	Primarily forest; Dead wood
<i>Hydnum repandum</i> Fr. (TBI 5009197)	Irmis tucha	–	0	Jul-Oct	Forest; Soil
<i>Hygrophoropsis aurantiaca</i> (Wulfen) Maire (TBI 5009169)	Tsrumiklio	–	0	Jul-Oct	Primarily coniferous forest; Soil, decaying wood

Scientific Name (Collection Nos.)	Major Georgian names according to the literature	Names mentioned in the interviews	Number of respondents who mentioned the species	Season	Habitat; Substrate
<i>Kuehneromyces mutabilis</i> (Schaeff.) Singer & A.H.Sm. (TBI 5009184)	Zapkhulis manch'k'vala	–	0	Jul-Nov	Primarily beech forest; Living or dead wood
<i>Laccaria laccata</i> (Scop.) Cooke (TBI 5009156)	Martio	–	0	Jul-Nov	Forests; Soil
<i>Lactarius deliciosus</i> (L.) Gray* (TBI 5009175)	Mch'ada	Guiz, Guz, Ch'vadvai	63	Aug - Nov	Coniferous forest; Soil
<i>Lactarius necator</i> (Fr.) Karst (TBI 5009161)	Shavi arq'a	–	0	Jul-Nov	Primarily coniferous forest; Soil
<i>Lactarius piperatus</i> (L.) Pers.* (TBI 5009189)	Arq'a	Arq'ai	82	Jul-Nov	Primarily beech forest; Soil
<i>Lactarius scrobiculatus</i> (Scop.) Fr. (TBI 5009162)	Q'viteli pach'ich'a	–	0	Jul-Oct	Forest; Soil
<i>Lactarius torminosus</i> (Schaeff.) Gray (TBI 5009190)	Nabada sok'o	–	0	Jul-Nov	Primarily birch forest; Soil
<i>Lactarius vellereus</i> (Fr.) Fr. (TBI 5009185)	Savartskhela	–	0	Jul-Oct	Forest; Soil
<i>Lactarius volemus</i> (Fr.) Fr. (TBI 5009186)	Ch'ech'k'et'a	–	0	Jul-Oct	Primarily beech forest; Soil
<i>Laetiporus sulphureus</i> (Bull.) Murrill (TBI5009177)	Q'viteli abeda	–	0	May - Oct	Forest; Living or dead wood
<i>Leccinum aurantiacum</i> (Bull.) Gray. (TBI5009192)	Verkhvisdzira	–	0	Aug - Oct	Primarily poplar stand; Soil
<i>Leccinum scabrum</i> (Bull.) Gray (TBI5009193)	Arq'isdzira	–	0	Aug - Oct	Primarily beech forest; Soil
<i>Lycoperdon perlatum</i> Pers.* (TBI5009067, TBI5009081)	Khorklebiani gudapshuk'a	Malatus	6	Jun-Nov	Forest, grassland; Soil
<i>Lycoperdon pyriforme</i> Schaeff.* (TBI5009090)	Mskhlisebri gudapshuk'a	Malatus	6	Jun-Nov	Various forests; Soil, decaying wood
<i>Macrolepiota excoriata</i> (Schaeff.) Wasser* (TBI5009304)	Tetri ts'erosts'viva	Kama, Irmispekha	72	Jun -Oct	Various forests, roadsides; Soil
<i>Macrolepiota procera</i> (Scop.) Singer* (TBI 5009305)	Ts'erosts'viva	Kama, Irmispekha	72	Jun -Oct	Various forests, roadsides, fields; Soil
<i>Marasmius oreades</i> (Bolton) Fr. (TBI5009287)	Jimla	–	0	May-Oct	Fields; Soil
<i>Mycetinis alliaceus</i> (Jacq.) Earle ex A.W.Wilson & Desjardin (TBI5010036)	Sanelebel	–	0	May-Oct	Various forest; Buried twigs and other debris
<i>Neolentinus lepideus</i> (Fr.) Redhead & Ginns (TBI5009435)	Kertslovani pirpitk'bila	–	0	May-Oct	Primarily coniferous forest; Stumps
<i>Phallus impudicus</i> L. (TBI5009416)	Kveq'nis gula	–	0	Aug - Oct	Primarily beech forest; Soil
<i>Pleurotus cornucopiae</i> (Paulet) Rolland* (TBI 5009421)	Machalo	Ts'iprash tk'ubul, Ts'ipi sok'	61	May-Oct	Primarily beech forest; Living or dead wood
<i>Pleurotus ostreatus</i> (Jacq.) P.Kumm.* (TBI 5009449)	Khetamkhali	Ts'iprash tk'ubul, Ts'ipi sok'	61	May-Oct	Primarily beech forest; Living or dead wood
<i>Polyporus squamosus</i> (Huds.) Fr.* (TBI5009436)	Dzerana	Dzero	23	May-Oct	Primarily beech forest; Living or dead wood
<i>Psathyrella candolleana</i> (Fr.) Maire (TBI 5009422)	Tetri tsumanch'k'vala	–	0	May-Oct	Various forests; Living or dead wood
<i>Ramaria flava</i> (Schaeff.) Quéf.* (TBI5010034)	Q'viteli sachechela	Irmis rka	43	Jun-Sep	Various forests; Soil
<i>Russula adusta</i> (Pers.) Fr. (TBI5009418)	Mura sok'o	–	0	Jun -Oct	Primarily coniferous forest; Soil
<i>Russula aeruginea</i> Lindbl. ex Fr. (TBI 5009447)	Mtredio	–	0	Jun -Oct	Primarily beech forest; Soil
<i>Russula cyanoxantha</i> (Schaeff.) Fr. (TBI 5009433)	Ghvinio	–	0	Jul-Sep	Primarily beech forest; Soil
<i>Russula delica</i> Fr. (TBI 5009426)	Tskhenis k'bila	–	0	Jun -Oct	Various forests; Soil
<i>Russula emetica</i> (Schaeff.) Pers. (TBI 5009414)	Bghavana	–	0	Jun -Oct	Primarily coniferous forest; Soil
<i>Russula foetens</i> Pers. (TBI 5009444)	Mq'rali khrashuna	–	0	Jun -Oct	Primarily birch forest; Soil
<i>Russula nigricans</i> Fr. (TBI	Moshavo khrashuna	–	0	Jun -Oct	Various forest; Soil

Scientific Name (Collection Nos.)	Major Georgian names according to the literature	Names mentioned in the interviews	Number of respondents who mentioned the species	Season	Habitat; Substrate
5009430)					
<i>Russula vesca</i> Fr. (TBI 5009446)	Datuna	–	0	Jun -Oct	Deciduous forest; Soil
<i>Russula virescens</i> (Schaeff.) Fr. (TBI 5009439)	Khakhvilo	–	0	Jun -Oct	Deciduous forest; Soil
<i>Sarcodon imbricatus</i> (L.) P.Karst. (TBI5010035)	Irema sok'o	–	0	Aug - Oct	Primarily coniferous forest; Soil
<i>Suillus luteus</i> (L.) Roussel* (TBI 5009424)	Chveulebrivi sok'o	duma Khortsasoko	33	May - Oct	Primarily pine forest; Soil

\* indicates the species mentioned in the interviews collected during the present study; Georgian names are given according to [25]; seasonality, habitat and substrate are given according to [25, 26].

**4.1.2. Mushroom Names**

Formerly the population of Svaneti must have had better knowledge of mushrooms, which is evidenced by literature data, in particular by a much higher number of local names in literature, in a number of cases accompanied by mushroom descriptions [11-17], than found in the current interviews (table 2). Reference [11] gives the highest number of vernacular names (30) with mushroom descriptions and in some cases descriptions of their use. The total number of vernacular names and their modifications in all the available

dictionaries are about 50. The majority of these names is now lost in the population; the following 12 vernacular names are still remembered: “Arq’ai”, “Ch’aduai”, “Chazhi pu”, “Dzero”, “Guiz”, “Guz”, “K’ok’oshol”, “Malatus”, “Manch’k’varai”, “Neq’v”, “Ts’ipi sok’”, “Ts’iprash tk’ubul” (table 1). Three names: “Katmiskonai”, “Irmispekha”, “Irmis rka” mentioned by respondents were not found in any of the dictionaries considered. On the basis of mushroom descriptions provided by the above cited literature sources we managed to identify some of the species in question (table 2).

**Table 2.** Svanetian Names and Descriptions of Macro-fungi Given in the Literature and Species / Species Groups Identified for the Vernacular Names Presented (Chol. – Choluruli dialect, Lshkh. – Lashkhuri dialect, Lnt. – Lentekhuri dialect, Bz.- Balszemouri dialect, Bk. – Balskvemouri dialect, Zs. – group of Zemo Svanetian dialects).

Svanetian name	Latin name (identified by the authors)	Fungi / lichen description in the references cited
<u>General names for fungi</u>		
Kokod (Chol.)		Fungus [16]
Kokood		Fungus [16]
Sik', T'q'ubul		Fungus [12]
Sok'		Fungus [14]
Sok'il (Lshkh.)		Fungus [13]
T'q'ubul		Edible mushroom [27]
T'q'ubul (Bz., Bk., Lshkh.)		Fungus [14]
T'q'ubul (Chol.)		Edible mushroom [16]
<u>Polypores</u>		
Abed	<i>Fomes</i> sp.	Polypore [27]
Abed (Chol.)	<i>Fomes</i> sp.	Boiled down fungus[16]
Abed (Lshkh.)	<i>Fomes</i> sp.	A hard fungus, grows out from fallen trees; the fungus is boiled down in ash and kneaded to produce tinder [11]
Abed (Lshkh., Lnt.), Habed (Bz.), Hobed (Bk.)	<i>Fomes</i> sp.	Polypore [14]
Abedissok'o, Hobediak, Hobediakt'q'ubul		<i>Fomes fomentarius</i> [17]
Habed	<i>Fomes</i> sp.	Polypore[12]
Ha-bed, Ho-bed	<i>Fomes</i> sp.	Polypore [15]
Dzero	<i>Polyporus squamosus</i>	Eaten while fresh [11]
Gak'asok' (Lshkh.)	<i>Laetiporus sulphureus</i>	Walnut mushroom – yellow, non-edible [11]; walnut mushroom - yellowish, non-edible [13]
Gak'isok' (Chol.)	<i>Laetiporus sulphureus</i>	Walnut mushroom, useful for tinder production after boiling down; like Mamali soko, dry, used dry while treating “Dasuntkuli” (see explanation of "Dasuntkuli" in the text)

		with magic spells [16]; walnut mushroom [27]
Ts'iva	Not identified	Ts'iva is like Abedi, it gives tinder when boiled down, it easily flares up and does not die out [11]; Ts'iva is like Abedi and it transforms to tinder when boiled down [14]
Ts'iiva	Not identified	Tree fungus [16]
Puq'u (Bz.)	Not identified	Tree fungus used for tinder [14]
<u>Agarics</u>		
Arq'ai	<i>Lactarius piperatus</i>	White mushrooms with latex [16]
Arq'ai (Chol.)	<i>Lactarius piperatus</i>	White mushroom with white latex; poisonous when raw; its abundance betokened snowy winter [16]
Arq'ai (Lshkh.)	<i>Lactarius piperatus</i>	White, eaten roasted [11]
Arq'ai (Lshkh.), Arq'a (Lnt.)	<i>Lactarius piperatus</i>	White mushroom, Arq'a mushroom; Arq'a mushroom is eaten roasted [14]
Ch'aduai	<i>Lactarius deliciosus</i>	Red mushroom, eaten raw, roasted, boiled [11]
Chazhisok'	<i>Coprinus</i> sp.	Grows on horse manure, non-edible [11]
Ch'vadvai	<i>Lactarius deliciosus</i>	Edible mushroom, appears in summer and persists till autumn. It this mushroom predominated, people expected rich harvest [16]
Guiz(Zs.), Guz (Lshkh.)	<i>Lactarius deliciosus</i>	Mch'ada soko [14]
Khari k'bilai	<i>Russula delica</i>	Khari k'bila - looks like Arq'a soko, is eaten roasted [11]
Manch'k'varai	<i>Armillaria mellea</i>	Manch'k'vala [16]
Manch'k'varai (Chol.)	<i>Armillaria mellea</i>	Manch'k'vala [16]
Manch'k'varai (Lshkh.)	<i>Armillaria mellea</i>	It is collected in spring, dried up and eaten in winter [11]; Manch'k'vala, collected in summer, dried up and eaten in winter in soup [13]
Neq'v	<i>Amanita caesarea</i>	Soft mushroom [11]
T'q'ubla	<i>Pleurotus ostreatus</i> , <i>P. cornucopiae</i>	Edible mushroom, grows on trees [11]
Ts'ipisok'	<i>Pleurotus ostreatus</i> , <i>P. cornucopiae</i>	Beech mushroom, edible [11]
Ts'iprasht'q'ubul		<i>Pleurotus ostreatus</i> [17]
Vijik'orgol (Lashkh.)	<i>Macrolepiota</i> sp.	Grows on ground, looks like an umbrella, edible [11]
Puffballs		
Chazhipu	<i>Bovista</i> sp., <i>Calvacia</i> sp.	Ts'khenis kuili - usual in riparian forest, rounded, small, becomes dusty when ripe. Grows in fields, looks like cheese, crashes like "suluguni" <sup>3</sup> when weighed upon; becomes dusty when ripe [11]
K'ok'oshol (Chol.)	<i>Bovista</i> sp.	Small rounded good-looking fungus [16]; Fresh fungus [27]
Malatus		<i>Lycoperdon</i> [17]
Malatus (Lshkh.)	<i>Lycoperdon</i> sp.	Meliis tsuili - grows on grass, white, later becomes black, edible while fresh [11]
Mavlatu (Chol.)	<i>Lycoperdon</i> sp.	Small white autumn fungi, after drying out it is full of black dust [16]; a fungus, which becomes dust as soon as it grows up [27]
<u>Not identified</u>		
Q'ivnul sok'		No other edible mushroom can be compared with it, good in March [11]
K'orich'ol (Lshkh.)		Blood red fungus, very small, good when roasted [11]
K'oroch'ol (Lshkh.)		White outside, blood red inside, very small, delicious when roasted [11]
Mavsoq'ian sok'		A fungus, which make one mad [11]
Matkhep sok' (Lshkh.)		Dapertkheba soko - spread over the ground, non-edible [11]
Piluai		A fungus, which make one mad [11]
Tsaira sok'		Elm fungus, black, edible, tasty [11]
Tsats'khvi sok'		Linden fungus, edible, tasty [11]
Ghumuri sok'		Spruce fungus, non-edible [11]
Ghuninichv		Khbstucha is good roasted; grows on pears and elsewhere [11]

<sup>3</sup>"Suluguni" is a kind of Georgian cheese.

Ghunitkhum		Khbos tava, edible [11]
Iebra sok' (Lshkh.)		Sweet cherry tree fungus, red, non-edible [11]
K'imeegh (Chol.)		White fungus, non-edible [16]
Kokodilar		A good mushroom of middle size, red, tasty when roasted [11]
Lichens		
Chach	<i>Usnea</i> spp., <i>Bryoria</i> spp., <i>Ramalina thrausta</i>	Beard of a man and a tree [27]
Pimpous	<i>Usnea</i> spp., <i>Bryoria</i> spp., <i>Ramalina thrausta</i>	Hair, tree moss [11]

Several species mentioned in the interviews were not identified on account of insufficiently detailed descriptions and absence of specimen material; the vernacular names of these species are: “Datvisq’ura” (5 interviews), “Ts’itla” (3), and “Dedopala” (2).

The collective names for mushrooms in various dialects of Svanetian language are: “Sok’”, “T’q’ubul’”, “But’q’uli’”, “Kokod’”, “Sok’il’”, “Sik’” (Table 2). At present the population mainly uses the word “Sok’o” for mushrooms in general. Species specific Svanetian mushroom names are thus clearly being lost in everyday life.

#### 4.1.3. Mushroom Oracles

In Svaneti (in particular, Lashkheti, a historical commune of Svaneti) mushroom observations were formerly used as an oracle: it was thought that abundant “Ch’vadvai” (*Lactarius deliciosus*) promised good harvest, and much “Arq’ai” (*Lactarius piperatus*) betokened snowy winters [27]. None of the respondents interviewed mentioned/had heard about such folklore.

#### 4.1.4. Tinder

Formerly tinder was made of “Abeda soko” (*Fomes* sp.) – the name literally means “tinder mushroom”. The population (mainly elders) still recalls how to prepare tinder. A birch polypore (*Piptoporus betulinus* (Bull.) P. Karst.) was thought to be the best material for tinder; it was well boiled with ash, well beaten, dried and ground, yielding tinder (B. Kakhberidze, Mest’ia, pers. comm., 2014). The younger population has already lost this knowledge.

#### 4.1.5. Mushrooms as Medicine

The Svaneti population also used mushrooms for medicinal purposes. Almost 100% of the respondents collected already black (over-ripe) fruit-bodies of *Lycoperdon* and *Bovista* species from August to October, and kept them dry in glass pots during the whole year. The fungi were used to stop bleeding by pouring the contents of the fruit-bodies onto wounds; the powder was also used for treatment burns. The peel of a fruit-body was also put as a plaster on abscesses.

Another mushroom used for medicinal purpose is *Lactarius deliciosus*: a wine-like juice was produced by mixing this mushroom with sugar, and the juice was used for cough, and the treatment of diarrhea (D. Jinchradze, M. Kurasbediani and Sh. Kurasbediani, Babili, pers. comm., 2014). Several elders recalled that in their childhood their

parents prepared a mushroom tincture, which was used by hunters to cure colds by rubbing the tincture onto body.

The medicinal use of fungi in Svaneti is also described in literature: “Patrik’i”, “Patruki” was made of polypore and birch twigs; the twigs were sharpened like a pencil, the tip smeared with a mushroom based emollient and put into wound” [28]. “... „Mamali sok’o”, was used dry while treating “Dasuntkuli” with magic spells” [16]. “Dasunuli” is the same as “Dasuntkuli” – when (a snake) touches something with its mouth and poisons it” [29]; Georgian traditional medicine knows a category of rash, whose appearance is explained by taking food products passed over or smelled by a mouse, snake, etc. [30]; “Dasunva” means “to smell” and “Dasuntkva” means “to breathe on” in Georgian) According to various descriptions provided by the literature sources (Table 2), the polypore used must be *Laetiporus sulphureus* (Bull.) Murrill.

## 4.2. Lichens

Lichens, particularly, *Usnea* and *Bryoria* species as well as *Ramalina thrausta* (Ach.) Nyl. are called “Pimpa” or “Pimpous” [11] and “Chach” [27] in Svaneti. Lichens were never used for food there. “Pimpa” or “Pimpous”, literally means “a man with dense hair and beard” and is also described as “conifer bristle.” These species were used by hunters as field-bedding to keep warmth in cold winters. The use of lichens is reflected in local folklore: one of the respondents told a story about a hunter who went to Mt. Zhibelakhvi, killed a Caucasian goat, and when he broiled its meat, a giant ogre came to the cave where the hunter stayed. The ogre asked for the broiled meat. The hunter gave him a piece but when the ogre asked for another one, the hunter thought that his unexpected guest would eat the whole goat and thought to dodge the ogre. He took the “Pimpous”, wrapped himself in lichens, and set fire to them with a burning log. The ogre did the same but burnt himself, rushed out of the cave and fell into an abyss (R. Pirtskhelani, Mest’ia, pers. comm., 2014).

## 5. Conclusions

The following major conclusions can be drawn from the results of the present work: the local population of Svaneti currently uses 22 species of mushrooms for food, 10 of which are used most frequently. In the past the population of Svaneti must have had better knowledge of mushrooms, which is



evidenced by literature data, in particular by the much higher number of local names. Fungi were originally not only used for food, but also for tinder production (polypores), for medicine (sticks for emollient application (polypores), medications for internal and external use (agarics, puffballs)). A limited number of lichens were used by hunters as field-bedding to keep warm in the cold winters. The uses of fungi and lichens are clearly reflected in the local folklore. Further investigations are needed to (a) clarify the identity of certain fungi indicated by respondents by vernacular names or usage descriptions / found in the literature without any descriptions or with insufficient descriptions to allow a identification to species or species group, (b) to compare fungi use with other regions of Georgia and the Caucasus in general. It is greatly recommended to publish local popular guidebooks on edible (67 recorded vs. 22 actually used by the local population), and poisonous (many respondents mentioned frequent cases of *Amanita* poisoning because of confusion with *Agaricus*), mushrooms occurring in the study region, to be disseminated among the population.

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