

STEREUM INSIGNITUM QUÉL. AND STEREUM
SUBTOMENTOSUM POUZ. IN JUGOSLAVIA

MILICA TORTIĆ and MILUTIN JELIĆ

(Botanical Institute of the University of Zagreb, and Botanical Institute
of the Natural Sciences Faculty, Beograd)

Received December 8, 1971

In Pilát's monograph of Stereaceae (1930) there is described *Stereum fasciatum* Schw. with several synonyms, the most important being *S. insignitum* QuéL., *S. versicolor* var. *illyricum* Beck, *S. ostrea* (Blume et Nees) Fr., *S. arcticum* Fr. Bourdot et Galzin (1928) distinguish two species: *S. insignitum* and *S. fasciatum*. Konrad et Maublanc (1924—1937) are apparently of the same opinion, since they give as the synonyms of *S. insignitum* only *S. insigne* Bres. and *S. versicolor* var. *illyricum* Beck.

For a long time the European authors treated these fungi either as one species, under the name of *S. insignitum*, but sometimes also as *S. fasciatum*, or they recognized *S. fasciatum* as a separate species. Pouzar (1964) showed finally that there really exist two species: *S. insignitum* and another which he named *S. subtomentosum*, as he found that the true *S. fasciatum* does not occur in Europe at all.

Morphologically, the two species are rather similar. The fruitbody is relatively large, fan-shaped, thin, and often at the base constricted into a short stipe. However, while the upper surface of *S. insignitum* is dark rusty brown (Photo 1), it is ochraceous in *S. subtomentosum* (Photo 2). A striking character is the yellowing of the hymenium in fresh material of *S. subtomentosum* when bruised. Microscopically they differ by the presence of acanthophyses in *S. insignitum* and a complete lack of them in *S. subtomentosum*.

The geographical distribution and ecology are also different. *S. insignitum* is a Mediterranean and Submediterranean-Atlantic species, which is known only from the southern half of Europe (France with Corsica, SW Germany, Austria, Czechoslovakia, Hungary, Roumania, Jugoslavia, Bulgaria, Greece) including Caucasus. Its chief substrate is *Fagus*. However, *S. subtomentosum* has, in Europe, a more northern distribution, being known from Austria, Czechoslovakia, France, Germany, Poland, Scandi-

navia, Switzerland and some northern parts of the USSR, but is also found in North America and Asia. It prefers *Alnus* as a substrate, although it grows on several other hardwood species.

Up to now, *Stereum insignitum* has rarely been reported for Jugoslavia in our mycological literature, and then sometimes under other names. There exist some voucher specimens in PR and PRC (revised by Z. Pouzar), which one of us had the opportunity to examine. Most of the specimens in PRC were collected in Bosnia by Beck who described the fungus in 1899 as *S. versicolor* (Sw. ex Fr.) Fr. var. *illyricum* G. de Beck. There is one of his specimens under this name in PR, but there is no date or exact locality (except »Bosnien«), whilst *S. fasciatum* Schweinitz is given as synonym.

According to our investigations, *S. insignitum* is widely spread in Jugoslavia (Fig. 1). It was found in all the beech forests which we had the opportunity to visit, often in large quantities. Lisiewska and Jelić (1971) consider it a characteristic species for the beech forests of the *Fagion illyricum* alliance. In fact, there is an opinion among mycologists that the centre of the area for *S. insignitum* might lie just within Jugoslavia. There is no doubt that many more localities will be found in the future, especially in parts which were never or rarely explored by mycologists.

On the other hand, *S. subtomentosum* has up to now been found in only two localities (Fig. 1). They are apparently among the most southern in Europe, and although additional finds may be expected, the species is surely rather rare here. Therefore we took into consideration some published localities of *S. insignitum* for which no specimens exist, since they are situated in the region where beech forests occur and there is no probability that they were confused with *S. subtomentosum*.

Localities of *S. insignitum*:

Stojna Mountain near Kočevje, beech and fir forest, on dead *Fagus* wood at Jelenov studenec (880 m) and Koče (800 m) 28. V 1967, leg. M. Tortić and S. Hočevar, det. M. Tortić. ZA

Kočevski Rog Mountain near Kočevje: Stara Žaga, beech and fir forest, on dead *Fagus* wood, alt. about 850 m, 7. VIII 1969, leg. et det. M. Tortić, M. Lisiewska and S. Hočevar.

»... auf alten Buchen in der Voralpenregion der Kočna in Krain«. W. (Beck 1899, as *S. versicolor* var. *illyricum*)

Učka Mountain, on a *Fagus* stump in a meadow, alt. ca 700—850 m, 8. X 1966, leg. et det. M. Tortić and M. Svrček. ZA

Risnjak Nat. Park: Markov Brlog, Fagetum abietetosum, on a *Fagus* log, alt. 900 m, 24. V 1963. leg. et det. M. Tortić. ZA (Tortić 1966).

Paljetinski vrh near Delnice, Fagetum abietetosum, on a *Fagus* log, alt. 800 m, 27. VI 1967, leg. et det. M. Tortić.

Zeleni vir near Skrad, on a *Fagus* log, alt. 300 m, 9. VII 1964, leg. et det. M. Tortić. ZA (Tortić 1966).

Jugorje, between Metlika and Novo Mesto, beech forest, on a *Fagus* stump, alt. 640 m, 2. V 1971, leg. et det. M. Tortić.

Žumberačko gorje mountains, near Vodice, on a *Fagus* log, alt ca 800—900 m, 26. IV 1970, leg. et det. Tortić. ZA

Medvednica mountain near Zagreb, above Glog, *Fagetum montanum*, on a *Fagus* log, alt. ca 600—700 m, 12. VI 1966, leg. et det. M. Tortić. ZA.

"Apud lacum Kozjak, Plitvička jezera. Jugoslavia, Croatia, ad truncum emortuum *Fagi sylvaticae*", 2. VIII 1966, leg. et det. F. Kotlaba. PR 710792. — Lower Plitvice lakes, on a dead *Fagus* log, alt. ca 600 m, 14. VIII 1969, leg. et det. M. Tortić and M. Lisiewska. ZA

Plitvički Ljeskovac, *Fagetum montanum*, on *Fagus*, alt. 700 m, 21. VII 1963, leg. et det. M. Tortić. ZA.

Velebit mountain. Ružanski vrh above Alan, leg. A. Degen, det. v. Höhnel. (Moesz 1938).

"In valle Nacionalni park Vel. Paklenica ap. Starigrad prope Zadar in montibus Velebit ad truncum emortuum *Ostryae carpinifoliae*", 9. VII 1968, leg. et det. F. Kotlaba, rev. Z. Pouzar. PR 710791.

Plješivica mountain: Duga Luka, on dead *Fagus* wood, alt. 1000 m, 1. VIII 1967, leg. et det. M. Ušćuplić.

"Jajce, an Fagüs-Stumpf: leg. Fr. v. Höhnel". v. Höhnel and Litschauer in Wiesner Festschrift 1908, p. 59 as *S. insignitum*. (Pilát 1930). Herb. Bot. Staatssammlung, München.

Šedinac (SW of Jajce). v. Höhnel and Litschauer in Wiesner Festschrift 1908, p. 59 as *S. insignitum*. (Pilát 1930).

"Bosnia: Ad truncos *Fagi sylvatici* in sylvis subalpinis montis Smolin prope Žepče; m. Aug.« leg. et det. G. de Beck as *Stereum (Pleuropus) versicolor var. illyricum* G. de Beck. Revid. Z. Pouzar 23. I 1963. PR 5427. PRC (two specimens). (Beck et Zahbruckner 1899).

Igman mountain near Sarajevo: Veliko polje (1100 m) and Javornik (1300 m), on dead *Fagus* wood, 28. VI 1971, leg. et det. M. Ušćuplić.

"Bosn. Ad truncos in monte Bjelašnica: Hranisava, 18. VI 1885". leg. et det. G. de Beck as *S. hirsutum*. Revid. Z. Pouzar 9. XI 1961. PRC. — Šavnici on the slopes of Hranisava near Sarajevo, *Abieti-Fagetum*, on a *Fagus* branch, alt. ca. 900 m, 16. VIII 1970, leg. et det. M. Tortić and M. Lisiewska (Tortić and Lisiewska, in the press).

"Bosn. Romanja pl." (correctly: Romanija), leg. et det. G. de Beck as *S. hirsutum*. Revid. Z. Pouzar 9. XI 1961. PRC.

"Bosn. Ob Vogošća Tal gegen Ozren, 5. VII 1888", leg. et det. G. de Beck as *Stereum hirsutum*. Revid. Z. Pouzar 9. XI 1961. PRC.

"Bosn. Wälder der Babina, 7. VIII 1896", leg. et det. G. de Beck as *Stereum sp.* Det. Z. Pouzar 9. XI 1961. PRC. This locality could not be established and is therefore not shown on the map.

"Sub m. Hadža prope Stambulčić, ca 1120 m, 10. V 1936, leg. Maly" as *Stereum hirsutum*. Det. M. Tortić XI 1971. SARA. The substrate is given as *Abies alba* Mill., but the analysis of the fragments of bark to which the specimens are adhering allows the presumption that it belongs rather to a hardwood, probably beech.

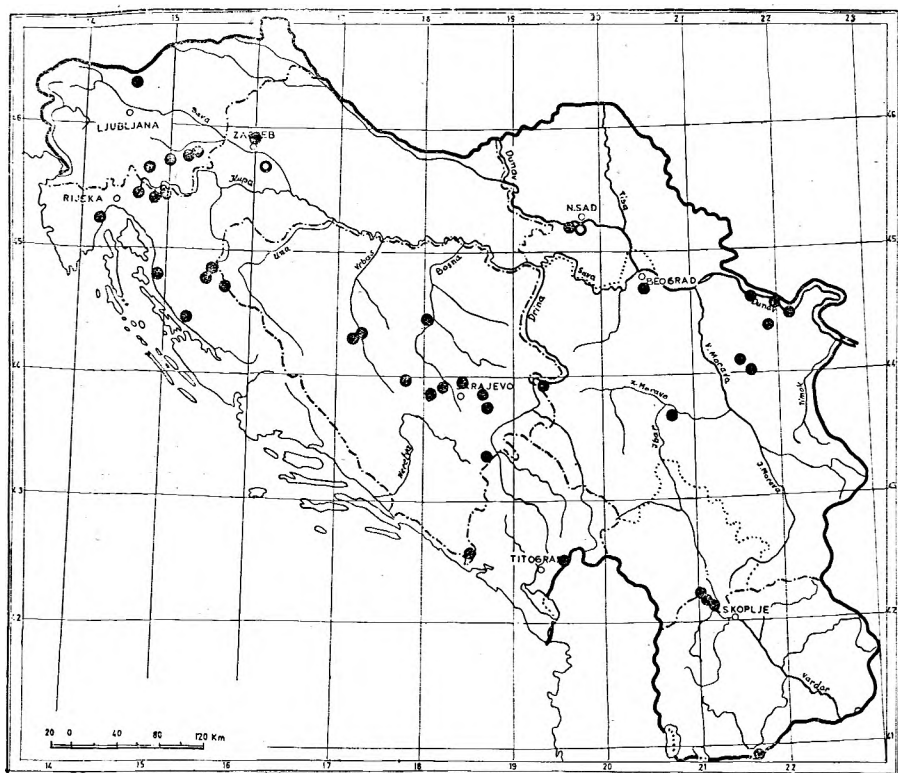


Fig. 1. The localities of *S. insignitum* (dots) and *S. subtomentosum* (circles) in Jugoslavia.

Sl. 1. Lokaliteti *S. insignitum* (točke) i *S. subtomentosum* (kružići) u Jugoslaviji.

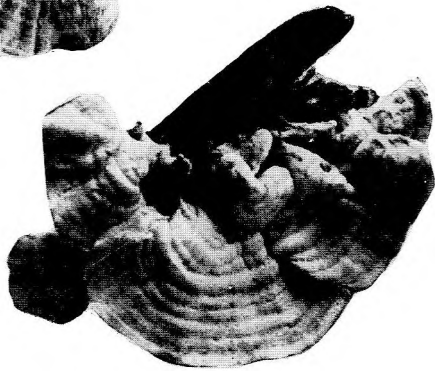
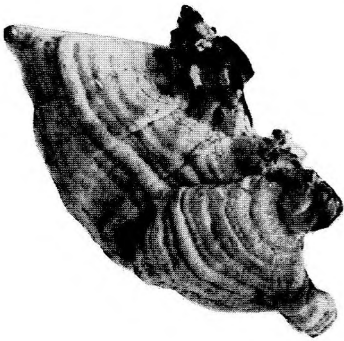
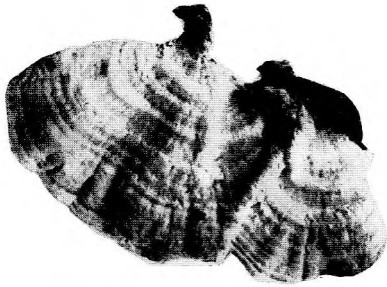
Photo 1. *Stereum insignitum* Quél. Goč, 25 VI 1964. Photo M. Jelić.

Photo 2. *Stereum subtomentosum* Pouz. Fruška gora, 26. IX 1970. Photo M. Jelić.

Photo 3. *Stereum insignitum* Quél. on a living *Fagus*, Goč, 24. IV 1971. Photo A. Cerny.



1



2



Vranica mountain: Matorac, Abieti-Fagetum, on several *Fagus* logs and a living tree, 1100—1300 m, 19. VIII 1970, leg. et det. M. Tortić and M. Lisiewska. ZA (Tortić and Lisiewska, in the press).

Peručica, on the slopes of Maglič mountain, Abieti-Fagetum, on a *Fagus* log, alt. ca. 1300—1400 m, 17. VII 1969, leg. et det. M. Tortić, ZA. According to Usčuplić (in litt.) it is frequent there.

Orjen mountain: Dobri do, on dead *Fagus* wood, alt. 1200 m, 28 IX 1967, leg. et det. M. Usčuplić.

"Iter montenegrinum 1886: in alpe Džibeze, 31. VII", leg. I. Szyszylowicz, det. G. de Beck as *S. rugosum*. Revid. Z. Pouzar 9. XI 1961. PRC. The locality lies on the frontier between Yugoslavia and Albania.

Fruška gora mountain: Iriški Venac, Fagetum montanum and Fagetum muscetum, on stumps and branches of *Fagus*, alt. 450 m, 29—31 VII 1969, leg. et det. M. Lisiewska and M. Jelić. Herb. Bot. Inst. Beograd (Lisiewska and Jelić 1971).

Avala mountain near Beograd. — "Auf durren Zweigen und Stämmen im Walde, VII 1897", leg. et det. N. Ranojević as *S. versicolor* var. *illyricum* Beck (Ranojević 1902). — "Auf Strünken von *Fagus silvatica*, V.", leg. et det. N. Ranojević as *S. insignitum* QuéL. (Ranojević 1910). — "In monte Avala prope Beograd, ca 300 m, ad ligna *Fagi silvaticae*, 20. X 1935." leg. V. Lindtner, det. A. Pilát as *Stereum subpileatum* B. et C. PR 485731 (revid. Z. Pouzar 23. I 1963), BEO. (Pilát 1937 as *S. subpileatum*).

Beljanica mountain, VI, leg. et det. N. Ranojević as *S. insignitum* (Ranojević 1910).

Južni Kučaj mountain, on dead and, sporadically, also living wood of *Fagus*, frequent, 26—28. IV 1971, leg. et det. A. Černy. Herb. Katedra ochrany lesů lesnické fakulty VŠZ, Brno.

Tara mountain: Kozja Stena, Mitrovac, Šljivovica. Abieto-Fagetum, on dead wood of *Fagus*, frequent, alt. 1000—1100 m, 18—22. VII 1969, leg. et det. M. Lisiewska and M. Jelić. Herb. Bot. Inst. Beograd. (Lisiewska and Jelić 1971).

Debeli Lug near Majdanpek, Fagetum montanum, on dead branches of *Fagus*, ca 300 m, 24—27. VII 1969, leg. et det. M. Lisiewska and M. Jelić. Herb. Bot. Inst. Beograd. (Lisiewska and Jelić 1971).

Derdap region: Livadice near Golubac, a fragment of Fagetum montanum wood, on a fallen log of *Fagus moesiaca*, alt. ca. 150 m, 28. VI 1967, leg. et det. M. Jelić. Herb. Bot. Inst. Beograd.

Derdap region: the vicinity of river Pesača, a fragment of Fagetum montanum columnetosum, on a fallen log of *Fagus moesiaca*, alt. ca. 180 m, 17. V 1967, leg. et det. M. Jelić. Herb. Bot. Inst. Beograd.

Derdap region: the vicinity of Donji Milanovac. near the river Paprtnica, in a fragment of Fagetum montanum, on a log of *Fagus moesiaca*, alt. ca. 100 m, 12. IX 1965, leg. et det. M. Jelić. (Jelić 1966).

Goč mountain: Dobra Voda, Abieto-Fagetum, on dead trunks of *Fagus moesiaca*, 1000—1100 m, 25. VI 1964, leg. et det. M. Jelić. Herb. Bot. Inst. Beograd. (Jelić 1967, as *S. fasciatum*).

»Divčibare montium Maljen, matrix *Fagus silvatica*, 29. IX 1946, leg. V. Lindtner det. M. Tortić and M. Jelić. BEO. (not shown on the map)

Šar planina mountain: near Brezovica, on dead and living *Fagus* wood, ca. 1500 m, 1—6. V 1971, leg. et det. A. Černy. Herb. Katedra ochranu lesů lesnické fakulty VŠZ, Brno.

Šar Planina mountain, "in Fagetis ad silvae limitem montis Ljuboten, alt. 1500—1800 m, solo dolomitico, matrix *Fagus*, VII 1937, leg. A. Pilát et V. Lindtner, det. A. Pilát" as *S. hirsutum* f. (or var.) *fasciatum*. Revid. Z. Pouzar 23. I 1963. PR 489267, 489349, 489445, 490628. One specimen in BEO. (Pilát et Lindtner 1938 as *S. hirsutum* f. *fasciatum*).

Šar Planina »in Fagetis ad Crni Kamen, matrix *Fagus*, alt. ca. 1100 m, VII 1937, leg. A. Pilát et V. Lindtner, det. A. Pilát" as *S. hirsutum* f. (or var.) *fasciatum*. Revid. Z. Pouzar 23. I 1963. PR 489049, 489064, 489072, 489101, 489109, 489112, 489114. One specimen in BEO. (Pilát et Lindtner 1938 as *S. hirsutum*, f. *fasciatum*, the last number as *S. hirsutum*).

»Nidže planina, in monte Sokol, V 1920, leg. Stříbrny, det. A. Pilát« as *S. fasciatum* Schweinitz. PR: Herbarium A. Pilát, Mycoflora bulgarica. Revid. Z. Pouzar 23. I 1963. Pilát (1930) cites this locality as belonging to Bulgaria, and gives the date as 17. V 1916. Sokol mountain (its highest point is 1882 m) lies on the frontier between Jugoslavia and Greece.

Localities of *S. subtomentosum*:

Čička Poljana near Zagreb, *Quercus-Genistetum elatae*, on fallen *Quercus* branches, alt. 100 m. 28. VII 1968, leg. et det. M. Tortić, revid. Z. Pouzar 30. VII 1971. ZA, PR.

Fruška Gora mountain: Iriški Venac, *Festuceto-Quercetum petraeae*, on a log of *Tilia* and the stump of (probably) *Quercus*, alt. 450 m. 26. IX 1970, leg. M. Jelić, det. Z. Pouzar 30. VII 1971. Herb. Bot. Inst. Beograd, ZA, PR.

•

The authors wish to thank Dr. Z. Pouzar (Prague) for revising some of their material, as well as for information given in discussions on the species here presented. To Dr. F. Kotlaba (Prague), Dr. M. Usčuplić (Sarajevo) and inž. A. Černy (Brno) we are indebted for several localities, and also to Mr. J. T. Palmer (Sutton Weaver, Chesh.) for correcting the English text.

Summary

Enquiries into the occurrence of *S. insignitum* Quél. in Jugoslavia show that it is very frequent in most of the localities investigated, and that many additional finds can be expected. The centre of its area probably lies in Jugoslavia, and it is considered as a possibly characteristic species for the beech forests of the *Fagion illyricum* alliance. Contrariwise, *S. subtomentosum* is published here, for the first time in Jugoslavia, from two localities which are apparently among the most southern in Europe, and the species is surely rare here.

References — Literatura

- Beck, G. de, Zahlbruckner, A., 1899: Schedae ad »Kryptogamas exsiccatas« editae a Museo Palatino Vindobonensi. Cent IV. Annales Naturhist. Mus. Wien 13, 446—447, 1899.
- Bourdot, H., Galzin, A., 1928: Hymenomycètes de France.
- Jahn, H., 1971: Stereoidne Pilze in Europa. Westf. Pilzbriefe 8, 69—176.
- Jelić, M., 1966: Neke ekološke karakteristike lignikolnih makroskopskih gljiva u bukovim šumama Đerdapskog područja. Glasn. Prir. muz. Beograd, Ser. B 21, 37—41.
- Jelić, M., 1967: Contribution à la connaissance de la flore des champignons macroscopiques des forêts mixtes de hêtre et de sapin (Abieto-Fagetum serbicum Jovanović 1959) dans la montagne Goč (RS de Serbie). Glasn. Bot. Zav. Bašte Univ. Beograd 2, 197—202.
- Konrad, P., Maublanc, A., 1924—1937: Icones selectae fungorum.
- Lisiewska, M., Jelić, M., 1971: Mycological investigations in the beech forests of some reservations in Serbia (Yugoslavia). Fragmenta flor. et geobot. 17, 147—161.
- Moesz, G., 1938: Aufzählung der in Velebit-Gebirge bisher beobachteten Pilzen. In: Degen, Flora velebitica, Bd. III, 281—298.
- Pilát, A., 1930: Monographie der europäischen Stereaceen. Hedwigia 70, 10—132.
- Pilát, A., 1937: Contribution à la connaissance des Basidiomycetes de la peninsule des Balkans. Bull. Soc. Myc. France 53, 81—104.
- Pilát, A., Lindtner, V., 1938: Ein Beitrag zur Kenntnis der Basidiomyceten von Südserbien I. Glasnik skop. naučnog društva 18, 173—192.
- Pouzar, Z., 1964: *Stereum subtomentosum* sp. nov. — pevník plstnatý a jeho systematické vztahy. Čes. Mykol. 18, 147—156.
- Ranojević, N., 1902: Beitrag zur Pilzflora Serbiens. Hedwigia 41, 89—103.
- Ranojević, N., 1910: Zweiter Beitrag zur Pilzflora Serbiens. Ann. Myc. 12, 393—421.
- Reid, D., A., 1968/69: Spring Fungi in Corsica. Revue de Mycol. 33, 3—27, 232—267.
- Tortić, M., 1966: Makromiceti Gorskog Kotara. Acta bot. croat. 25, 35—50.
- Tortić, M., Lisiewska, M.: Mikološka istraživanja u nekim bosanskim bukovim šumama (in the press).

S A D R Ź A J

STEREUM INSIGNITUM QUEL. I S. SUBTOMETOSUM POUZ. U JUGOSLAVIJI

Milica Tortić i Milutin Jelić

(Institut za botaniku Sveučilišta u Zagrebu i Institut za botaniku
Prirodno-matematičkog fakulteta u Beogradu)

S. insignitum i *S. subtomentosum* dugo su vremena bili smatrani ili kao jedna vrsta, koja se citirala kao *S. insignitum* a kadgod i kao *S. fasciatum*, ili su razlikovane dvije, od kojih je druga nazivana *S. fasciatum*. Pouzar (1964) je dokazao da uistinu postoje dvije vrste, ali da *S. fasciatum* ne dolazi u Evropi, pa je drugu nazvao *S. subtomentosum*.

Ove dvije vrste su po habitusu prilično slične, no razlikuju se makroskopski najviše bojom, a mikroskopski naročito po tome što kod prve postoje u himeniju akantofize. Osim toga velike su razlike u ras-

prostranjenosti i ekologiji. *S. insignitum* je mediteranska i submediteransko-atlantska vrsta, poznata samo iz Evrope, i to njezine južne polovice, a na istoku dopire do Kavkaza. Najvažniji supstrat joj je bukva, rijetko dolazi na drugim listačama. *S. subtomentosum* je opet pretežno rasprostranjen u sjevernom dijelu Evrope, a raste i u sjev. Americi i Aziji. Najčešće se nalazi na johi, iako je poznat i s drugih rodova listopadnog drveća.

Za Jugoslaviju je postojalo malo podataka o *S. insignitum* u našoj mikološkoj literaturi; nešto primjeraka, većinom neobjavljenih, nalazi se u PR i PRC. Tijekom istraživanja flore gljiva u Jugoslaviji autori su se, međutim, uvjerali da je ova vrsta na lokalitetima dosad ustanovljenim kod nas većinom vrlo česta, pa se može očekivati na cijelom području bukovih šuma. Lisić i Jelić (1971) smatraju da bi *S. insignitum* mogao biti karakterističan za bukove šume svezve *Fagion illyricum*. a postoji mišljenje među mikolozima da je središte rasprostranjenosti ove vrste upravo u našoj zemlji.

S. subtomentosum je ovdje prvi put objavljen za Jugoslaviju, s dvaju međusobno dosta udaljenih lokaliteta. Iako je vjerojatno da će se naći još ponegdje, ove se vrste nalazi kod nas na jugu svog areala, pa je po svoj prilici rijetka.

Dr Milica Tortić
Institut za botaniku
Sveučilišta u Zagrebu
Marulićev trg 20/II
41000 Zagreb (Jugoslavija)

Milutin Jelić
Institut za botaniku
Prirodno-matematičkog fakulteta
Takovska 43
11000 Beograd (Jugoslavija)