

MICROMICETE DIN ORDINUL *ERYSIPIHALES* (FUNGI, *ASCOMYCOTINA*) PARAZITE PE PLANTE GAZDĂ DIN MASIVUL RARĂU

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Key words: Micromycetes, *Erysiphales*, Rarău Mountains

Abstract: The presente work relate to the Micromycetes of ord. *Erysiphales* on the host-plants in the Rarău Mountains.

The material was collected in june-october 1993-1997.

We identified 61 species of Micromycetes on the 170 species host-plants.

Between these we mention 14 species new host-plants in Romania.

Erysiphaceele sunt ciuperci microscopice strict parazite, constituind un grup omogen de ascomicete, atât prin structura morfo-anatomică, cât și în ceea ce privește modul de dezvoltare, ciclul biologic și bolile pe care le produc plantelor parazitare.

În România au fost colectate, publicate sau se găsesc în herbare și exsiccate 147 de specii de *Erysiphaceae* pe 1.272 de specii de plante gazdă [4], care reprezintă 28,2 % față de numărul total de specii - 521, semnalate până în prezent în literatura de specialitate [7].

Materialul micologic care face subiectul acestei lucrări a fost colectat din Masivul Rarău în perioada 1993-1997. S-au identificat 61 de specii de micromicete parazite pe 170 de specii de plante gazdă, din care 14 specii sunt gazde noi în România.

Literatura de specialitate menționează până în prezent 8 specii de *Erysiphales* colectate din Masivul Rarău [5, 6, 8], specii confirmate de cercetările noastre.

Încadrarea sistematică a acestui grup este după Ainsworth (1965;1971;1973) [1] în:

Regnul *Mycobionta* (*Fungi*)

Încregătura *Eumycota*

Subîncregătura *Ascomycotina*

Clasa *Pyrenomycetes*

Ordinul *Erysiphales*

Familia *Erysiphaceae*

1. Genul *Blumeria* Golovin

1. *Blumeria graminis* (DC.) Speer

Material examinat:

Elymus repens (L.) Gould s.l. - Pojorîta, 47°31' lat. N, 25°30' long. E, alt. 800 m, 12.08.1996.

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Arrhenatherum elatius (L.) J. et C. Presl - Colbu, 47°26' lat. N, 25°31' long. E, alt. 920 m, 16.09.1996 (gazdă nouă).

Avena fatua L. - Pojorîta, 47°31' lat. N, 25°30' long. E, alt. 800 m, 24.06.1994 (gazdă nouă).

Bromus mollis L. - Colbu, 47°26' lat. N, 25°31' long. E, alt. 920 m, 16.06.1997.

Poa alpina L. - Vârful Rarău (Stația Meteo), 47°27' lat. N, 25°43' long. E, 1560 m, 24.08.1994 (gazdă nouă).

2. Genul *Erysiphe* Hedw. fil.: Fr.

2. *Erysiphe aquilegiae* DC.

Material examinat:

Aquilegia vulgaris L. - Moara Dracului, 47°28' lat. N, 25°37' long. E, alt. 750 m, 28.08.1994.

Caltha palustris L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 760 m, 16.07.1994; Izvorul Alb, 47°29' lat. N, 25°34' long. E, alt. 730 m, 25.08.1994. (Foto 1)

3. *Erysiphe artemisiae* Grev.

Material examinat:

Artemisia absinthium L. - Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 660 m, 28.08.1994.

Artemisia vulgaris L. - Chiril, 47°25' lat. N, 25°35' long. E, alt. 780 m, 15.09.1996; Colbu, 47°25' lat. N, 25°31' long. E, alt. 760 m, 16.09.1996.

4. *Erysiphe betae* Vãhã

Material examinat:

Beta vulgaris L. subsp. *vulgaris* (cultivatã) - Pojorîta, 47°32' lat. N, 25°29' long. E, alt. 690 m, 12.08.1996; Chiril, 47°24' lat. N, 25°34' long. E, alt. 750 m, 15.09.1996.

5. *Erysiphe biocellata* Ehrenb.

Material examinat:

Thymus pulegioides L. subsp. *montanus* (Waldst. et Kit.) Ronn. - Vârful Rarău, 47°27' lat. N, 25°34' long. E, alt. 1600 m, 16.07.1994.

6. *Erysiphe buhrîi* U. Braun

Material examinat:

Silene nutans L. subsp. *dubia* (Herbich) Zapal. - Piatra Șoimului, 47°27' lat. N, 25°33' long. E, alt. 1550 m, 25.09.1994.

7. *Erysiphe cichoracearum* DC.

Material examinat:

Achillea distans Waldst. & Kit. ex Willd. subsp. *tanacetifolia* Janchen - Valea Toancii, 47°25' lat. N, 25°35' long. E, alt. 860 m, 24.09.1994.

Achillea millefolium L. s.l. - Pojorîta, 47°31' lat. N, 25°29' long. E, alt. 765 m, 25.09.1995.

Carduus acanthoides L. - Defileul Bistriței la Zugreni, 47°27' lat. N, 25°32' long. E, alt. 750 m, 16.09.1996 (gazdă nouă).

- Carduus defloratus* L. subsp. *glaucus* Nyman - Pojorîta (Eva), 47°31' lat. N, 25°29' long. E, alt. 998 m, 24.06.1994 (gazdă nouă).
- Carduus personata* (L.) Jacq. - Vârful Rarău, 47°27' lat. N, 25°35' long. E, alt. 1540 m, 23.08.1994; Colbu, 47°26' lat. N, 25°31' long. E, alt. 920 m, 16.09.1996.
- Carlina acaulis* L. s.l. - Bodea, 47°30' lat. N, 25°34' long. E, alt. 870 m, 15.08.1996.
- Centaurea x austriacoides* Wołoszczak - Bodea, 47°30' lat. N, 25°34' long. E, alt. 850 m, 15.08.1996 (gazdă nouă).
- Centaurea indurata* Janka - Bodea, 47°30' lat. N, 25°34' long. E, alt. 1010 m, 22.09.1994.
- Centaurea phrygia* L. s.l. - Bodea, 47°30' lat. N, 25°34' long. E, alt. 835 m, 22.09.1994; Pojorîta, 47°31' lat. N, 25°29' long. E, alt. 785 m, 25.09.1995; Chiril, 47°24' lat. N, 25°34' long. E, alt. 750 m, 15.09.1995.
- Centaurea phrygia* L. subsp. *melanocalathia* (Borbás) Dostál - Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1430 m, 25.08.1994 (gazdă nouă).
- Centaurea x prodani* J. Wagner - Bodea, 47°30' lat. N, 25°35' long. E, alt. 870 m, 15.08.1996.
- Chamomilla recutita* (L.) Rauschert - Pojorîta, 47°32' lat. N, 25°29' long. E, alt. 700 m, 25.09.1995 (gazdă nouă).
- Cirsium boujartii* (Piller et Mitterp.) Schulz Bip. - Vârful Rarău, 47°27' lat. N, 25°35' long. E, alt. 1540 m, 24.08.1994 (gazdă nouă).
- Cirsium eriophorum* L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 760 m, 16.09.1996 (gazdă nouă).
- Cirsium erisithales* (Jacq.) Scop. - Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1425 m, 25.08.1994; Pojorîta, 47°31' lat. N, 25°30' long. E, alt. 710 m, 14.08.1994; Pojorîta (Eva), 47°31' lat. N, 25°29' long. E, alt. 990 m, 25.09.1995; Chiril, 47°24' lat. N, 25°34' long. E, alt. 745 m, 15.09.1996; Colbu, 47°25' lat. N, 25°31' long. E, alt. 785 m, 15.07.1995; 16.09.1996. (Foto 2)
- Cirsium oleraceum* (L.) Scop. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 785 m, 16.09.1996; 16.06.1997.
- Hieracium argillaceum* group (*Hieracium lachenalii* auct., non C. C. Gmelin.) - Pojorîta, 47°31' lat. N, 25°29' long. E, alt. 900 m, 25.09.1995.
- Hieracium aurantiacum* L. - Pojorîta, 47°31' lat. N, 25°30' long. E, alt. 750 m, 8.08.1996.
- Hieracium murorum* L. - Pojorîta (Adam), 47°31' lat. N, 25°29' long. E, alt. 1040 m, 24.06.1994.
- Hieracium pilosella* L. - Pietrele Doamnei, 47°27' lat. N, 25°34' long. E, alt. 1630 m, 24.08.1994.
- Hieracium pojoritense* Wołoszczak - Pojorîta (Eva), 47°31' lat. N, 25°29' long. E, alt. 990 m, 25.09.1995 (gazdă nouă).

- Hieracium rotundatum* Kit. ex Shultes - Pietrele Doamnei, 47°27' lat. N, 25°34' long. E, alt. 1630 m, 24.08.1994; Pojorîta, 47°31' lat. N, 25°30' long. E, alt. 750 m, 25.09.1995.
- Hieracium umbellatum* L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 785 m, 16.09.1996.
- Hieracium villosum* Jacq. - Pietrele Doamnei, 47°27' lat. N, 25°34' long. E, alt. 1625 m, 23.08.1994.
- Inula britannica* L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 760 m, 16.09.1996.
- Inula helenium* L. - Chiril, 47°24' lat. N, 25°35' long. E, alt. 750 m, 15.09.1996.
- Leucanthemum vulgare* Lam. - Pojorîta, 47°31' lat. N, 25°29' long. E, alt. 765 m, 8.08.1996.
- Senecio nemorensis* L. subsp. *fuchsii* (C.C. Gmelin) Čelak. - Moara Dracului, 47°28' lat. N, 25°37' long. E, alt. 750 m, 28.08.1994; Izvorul Alb, 47°29' lat. N, 25°35' long. E, alt. 730 m, 13.08.1996.
- Solidago virgaurea* L. - Pojorîta, 47°31' lat. N, 25°30' long. E, alt. 710 m, 25.09.1995.
- Tanacetum corymbosum* (L.) Schultz Bip. - Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1410 m, 25.08.1994 (gazdă nouă).
- Tanacetum corymbosum* (L.) Schultz Bip. subsp. *clusii* (Fischer ex Reichenb.) Heywood - Colbu, 47°25' lat. N, 25°31' long. E, alt. 760 m, 16.07.1994 (gazdă nouă).
- Tanacetum vulgare* L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 755 m, 16.09.1996.
- Telekia speciosa* (Schreber) Baumg. - Izvorul Alb, 47°29' lat. N, 25°35' long. E, alt. 735 m, 1.10.1993; Colbu, 47°25' lat. N, 25°31' long. E, alt. 770 m, 16.09.1996.

8. *Erysiphe circaeae* L. Junell

Material examinat:

- Circaea lutetiana* L. - Izvorul Alb, 47°29' lat. N, 25°35' long. E, alt. 750 m, 13.08.1996.

9. *Erysiphe convolvuli* DC.

Material examinat:

- Convolvulus arvensis* L. - Pojorîta, 47°32' lat. N, 25°29' long. E, alt. 690 m, 25.09.1995; Chiril, 47°24' lat. N, 25°35' long. E, alt. 750 m, 15.09.1996; Colbu, 47°25' lat. N, 25°31' long. E, alt. 735 m, 16.09.1996.

10. *Erysiphe cruchetiana* Blumer

Material examinat:

- Ononis arvensis* L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 765 m, 16.09.1996.

11. *Erysiphe cruciferarum* Opiz ex L.Junell

Material examinat:

- Alliaria petiolata* (Bieb.) Cavara & Grande - Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 660 m, 28.08.1995; Chiril, 47°24' lat. N, 25°35' long. E, alt. 750 m, 15.09.1996; Colbu, 47°25' lat. N, 25°31' long. E, alt. 740 m, 16.09.1996.
- Arabis alpina* L. - Pietrele Doamnei, 47°27' lat. N, 25°34', alt. 1610 m, 7.08.1993; 15.08.1994; 24.09.1995; 13.08.1996.
- Berteroa incana* (L.) DC. - Chiril, 47°24' lat. N, 25°35' long. E, alt. 750 m, 15.09.1996.
- Erysimum cheiranthoides* L. - Defileul Bistriței la Zugreni, 47°25' lat. N, 25°31' long. E, alt. 740 m, 16.09.1996.
- Erysimum witmannii* Zawadzki s.l. - Piatra Șoimului, 47°27' lat. N, 25°33' long. E, alt. 1545 m, 23.09.1994, (gazdă nouă).

12. *Erysiphe cynoglossi* (Wallr.) U.Braun

Material examinat:

- Buglossoides arvensis* (L.) I. M. Johnston - Colbu, 47°25' lat. N, 25°31' long. E, alt. 745 m, 16.09.1996.
- Cynoglossum hungaricum* Simonkai - Colbu, 47°25' lat. N, 25°31' long. E, alt. 760 m, 16.09.1996.
- Pulmonaria mollis* Wulfen ex Hornem. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 745 m, 16.09.1996.
- Pulmonaria officinalis* L. - Izvorul Alb, 47°29' lat. N, 25°35' long. E, alt. 750 m, 10.08.1993; Chiril, 47°24' lat. N, 25°35' long. E, alt. 785 m, 15.09.1996.
- Pulmonaria rubra* Schott - Moara Dracului, 47°25' lat. N, 25°37' long. E, alt. 760 m, 28.08.1994.
- Symphytum cordatum* Waldst. & Kit. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 755 m, 16.07.1994; Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 660 m, 28.08.1995.

13. *Erysiphe depressa* (Wallr.) Schlecht.

Material examinat:

- Arctium lappa* L. - Izvorul Alb, 47°29' lat. N, 25°35' long. E, alt. 730 m, 29.09.1993.
- Arctium tomentosum* Miller - Colbu, 47°25' lat. N, 25°31' long. E, alt. 760 m, 16.09.1996.

14. *Erysiphe galeopsidis* DC.

Material examinat:

- Ballota nigra* L. s.l. - Moara Dracului, 47°28' lat. N, 25°37' long. E, alt. 750 m, 28.08.1994.
- Galeopsis ladanum* L. - Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1425 m, 25.08.1994.
- Galeopsis speciosa* Miller - Colbu, 47°25' lat. N, 25°31' long. E, alt. 760 m, 16.09.1996.

- Glechoma hederacea* L. - Izvorul Alb, 47°29' lat. N, 25°35' long. E, alt. 750 m, 30.09.1993; Moara Dracului, 47°28' lat. N, 25°37' long. E, alt. 750 m, 28.08.1994; Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 660 m, 28.08.1995; Pojorita, 47°32' lat. N, 25°29' long. E, alt. 715 m, 25.09.1995; Chiril, 47°24' lat. N, 25°35' long. E, alt. 785 m, 15.09.1996; Colbu, 47°25' lat. N, 25°31' long. E, alt. 745 m, 16.09.1996.
- Laniam album* L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 745 m, 16.09.1996.
- Nepeta nuda* L. subsp. *nuda* - Colbu, 47°25' lat. N, 25°31' long. E, alt. 760 m, 16.07.1994.
- Origanum vulgare* L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 760 m, 16.09.1996.
- Stachys alpina* L. - Moara Dracului, 47°28' lat. N, 25°37' long. E, alt. 750 m, 28.08.1994; Pojorita (Adam), 47°31' lat. N, 25°29' long. E, alt. 1025 m, 15.08.1996.
- Stachys germanica* L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 760 m, 16.07.1994.
- Stachys sylvatica* L. - Moara Dracului, 47°28' lat. N, 25°37' long. E, alt. 750 m, 28.08.1994.

15. *Erysiphe galii* Fuckel

Material examinat:

- Galium aparine* L. - Moara Dracului, 47°28' lat. N, 25°37' long. E, alt. 750 m, 28.08.1994.
- Galium schultesii* Vest - Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1430 m, 25.08.1993; Moara Dracului, 47°28' lat. N, 25°37' long. E, alt. 750 m, 28.08.1994.
- Galium verum* L. s.l. - Bodea, 47°30' lat. N, 25°37' long. E, alt. 950 m, 22.09.1994.

16. *Erysiphe heraclei* DC.

Material examinat:

- Aegopodium podagraria* L. - Chiril, 47°24' lat. N, 25°34' long. E, alt. 750 m, 15.09.1996; Colbu, 47°28' lat. N, 25°37' long. E, alt. 750 m, 16.09.1996.
- Angelica sylvestris* L. - Colbu, 47°28' lat. N, 25°37' long. E, alt. 750 m, 16.09.1996.
- Chaerophyllum aromaticum* L. - Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 700 m, 28.08.1994.
- Chaerophyllum aureum* L. - Chiril, 47°24' lat. N, 25°34' long. E, alt. 750 m, 15.09.1996.
- Chaerophyllum hirsutum* L. - Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 700 m, 28.08.1994.
- Heracleum sphondylium* L. s.l. - Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 700 m, 28.08.1994; Pojorita, 47°31' lat. N, 25°29' long. E, alt. 775 m, 25.09.1995; Chiril, 47°24' lat. N, 25°34' long. E, alt. 750 m, 15.09.1996; Colbu, 47°28' lat. N, 25°37' long. E, alt. 750 m, 16.09.1996.

Pimpinella major (L.) Hudson - Pojorita, 47°31' lat. N, 25°29' long. E, alt. 775 m, 24.06.1994; Colbu, 47°28' lat. N, 25°37' long. E, alt. 750 m, 16.09.1996.

Pimpinella saxifraga L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 865 m, 16.09.1996.

Seseli libanotis (L.) Koch - Colbu, 47°28' lat. N, 25°37' long. E, alt. 750 m, 16.07.1994.

Torilis japonica (Houtt.) DC. - Colbu, 47°28' lat. N, 25°37' long. E, alt. 750 m, 16.09.1996.

17. *Erysiphe hyperici* (Wallr.) Fr.

Material examinat:

Hypericum maculatum Crantz - Schitul Rarău, 47°26' lat. N, 25°35' long. E, alt. 1040 m, 10.08.1993; Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1410 m, 25.08.1994; Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 660 m, 28.08.1994.

18. *Erysiphe knautiae* Duby

Material examinat:

Knautia arvensis (L.) Coulter - Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1425 m, 25.08.1994.

Knautia longifolia (Waldst. & Kit.) Koch - Pojorita, 47°31' lat. N, 25°29' long. E, alt. 775 m, 24.06.1994; Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1425 m, 9.08.1994.

Scabiosa columbaria L. - Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1425 m, 9.08.1994.

19. *Erysiphe lythri* L. Junell

Material examinat:

Lytrum salicaria L. - Izvorul Alb, 47°27' lat. N, 25°33' long. E, alt. 985 m, 7.08.1993.

20. *Erysiphe magnicellulata* U. Braun

Material examinat:

Phlox paniculata L. (cultivată) - Cîmpulung Moldovenesc, 47°32' lat. N, 25°35' long. E, alt. 650 m, 23.09.1995.

21. *Erysiphe mayorii* Blumer

Material examinat:

Cirsium arvense (L.) Scop. - Vârful Rarău, 47°27' lat. N, 25°35' long. E, alt. 1610 m, 22.08.1994.

Cirsium erisithales (Jacq.) Scop. - Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1405 m, 25.08.1994; Vârful Rarău, 47°27' lat. N, 25°35' long. E, alt. 1610 m, 24.09.1994.

22. *Erysiphe orontii* Castagne emend. U. Braun

Material examinat:

Campanula rapunculoides L. - Defileul Bistriței la Zugreni, 47°24' lat. N, 25°31' long. E, alt. 750 m, 16.09.1996.

Digitalis grandiflora Miller - poiană sub Vârful Prașca, 47°30' lat. N, 25°31' long. E, alt. 961 m, 16.08.1994; 25.09.1995; 12.08.1996 (gazdă nouă).

23. *Erysiphe pisi* DC.

Material examinat:

Astragalus glycyphyllos L. - Izvorul Alb, 47°29' lat. N, 25°33' long. E, alt. 850 m, 29.09.1993.

Medicago falcata L. - Chiril, 47°24' lat. N, 25°34' long. E, alt. 750 m, 15.09.1996.

Vicia sepium L. - poiană sub Vârful Hilga, 47°28' lat. N, 25°37' long. E, alt. 1090 m, 25.09.1994. (Foto 3)

Vicia sylvatica L. - Schitul Rarău, 47°26' lat. N, 25°35' long. E, alt. 1070 m, 25.08.1994.

24. *Erysiphe polygoni* DC.

Material examinat:

Polygonum aviculare L. - Schitul Rarău, 47°26' lat. N, 25°35' long. E, alt. 1035 m, 25.09.1994.

25. *Erysiphe ranunculi* Grev.

Material examinat:

Aconitum paniculatum Lam. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 875 m, 17.07.1994 (gazdă nouă). (Foto 4)

Aconitum tauricum Wulf. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 800 m, 17.07.1994.

Ranunculus repens L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 800 m, 16.09.1996.

Ranunculus serpens Schrank subsp. *nemorosus* (DC.) G. López - Izvorul Alb, 47°29' lat. N, 25°33' long. E, alt. 850 m, 10.08.1993.

Ranunculus strigosus Schur - Chiril, 47°24' lat. N, 25°34' long. E, alt. 750 m, 25.09.1994.

Thalictrum aquilegifolium L. - Moara Dracului, 47°28' lat. N, 25°37' long. E, alt. 750 m, 28.08.1994.

26. *Erysiphe salviae* (Jacz.) Blumer

Material examinat:

Salvia glutinosa L. - Izvorul Alb, 47°29' lat. N, 25°33' long. E, alt. 850 m, 30.09.1993; Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 670 m, 28.08.1995; Colbu, 47°25' lat. N, 25°31' long. E, alt. 800 m, 16.09.1996.

Salvia verticillata L. - Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1460 m, 25.08.1994; Colbu, 47°26' lat. N, 25°31' long. E, alt. 920 m, 16.09.1996.

27. *Erysiphe sordida* L. Junell

Material examinat:

Plantago major L. s.l. - Schitul Rarău, 47°26' lat. N, 25°35' long. E, alt. 1040 m, 25.09.1994.

Plantago media L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 750 m, 16.09.1996.

28. *Erysiphe thesii* L. Junell

Material examinat:

Thesium alpinum L. - Pojorita, 47°32' lat. N, 25°29' long. E, alt. 715 m, 24.06.1994; Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1430 m, 25.08.1994.

29. *Erysiphe trifolii* Grev.

Material examinat:

Anthyllis vulneraria L. s.l. - Piatra Șoimului, 47°27' lat. N, 25°33' long. E, alt. 1545 m, 26.09.1994.

Chamaecytisus hirsutus (L.) Link - Defileul Bistriței la Zugreni, 47°25' lat. N, 25°31' long. E, alt. 765 m, 16.09.1996 (gazdă nouă).

Chamaecytisus ratisbonensis (Schaeffer) Rothm. - Bodea, 47°30' lat. N, 25°33' long. E, alt. 923 m, 22.09.1994 (gazdă nouă).

Coronilla varia L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 750 m, 16.09.1996.

Genista tinctoria L. - Bodea, 47°30' lat. N, 25°33' long. E, alt. 970 m, 14.08.1996.

Lathyrus pratensis L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 750 m, 16.07.1994.

Lathyrus tuberosus L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 750 m, 16.09.1996.

Lotus corniculatus L. - Pojorita, 47°31' alt. N, 25°30' long. E, alt. 725 m, 18.06.1997.

Melilotus alba Medicus - Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 640 m, 28.08.1994.

Melilotus officinalis (L.) Pallas - Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1410 m, 25.08.1994.

Trifolium alpestre L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 750 m, 16.07.1994.

Trifolium medium L. s.l. - Bodea, 47°30' lat. N, 25°33' long. E, alt. 970 m, 2.08.1995.

Trifolium montanum L. - Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1435 m, 10.08.1993.

Trifolium pannonicum Jacq. - Bodea, 47°30' lat. N, 25°33' long. E, alt. 875 m, 15.08.1996.

Trifolium pratense L. - Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1435 m, 10.08.1993; Pojorita, 47°32' lat. N, 25°29' long. E, alt. 715 m, 24.06.1994.

30. *Erysiphe ulmariae* Desm.

Material examinat:

Filipendula ulmaria (L.) Maxim. s.l. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 865 m, 16.07.1994.

31. *Erysiphe urticae* (Wallr.) Blumer

Material examinat:

Urtica dioica L. - Schitul Rarău, 47°26' lat. N, 25°35' long. E, alt. 1040 m, 24.09.1994; Izvorul Alb, 47°29' lat. N, 25°35' long. E, alt. 750 m, 13.08.1996.

32. *Erysiphe valerianae* Blumer

Material examinat:

Valeriana officinalis Mikán fil. - Izvorul Alb, 47°29' lat. N, 25°35' long. E, alt. 775 m, 14.08.1996; Colbu, 47°25' lat. N, 25°31' long. E, alt. 865 m, 16.09.1996; Pojorita, 47°31' alt. N, 25°30' long. E, alt. 725 m, 18.06.1997.

33. *Erysiphe verbasci* (Jacq.) Blumer

Material examinat:

Verbascum lanatum Schrader - Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1425 m, 25.08.1994.

Verbascum nigrum L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 865 m, 16.07.1993; 16.09.1996.

3. Genul *Microsphaera* Lév.34. *Microsphaera alphitoides* Grifb. & Maubl.

Material examinat:

Quercus petraea (Mattuschka) Liebl. - Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 670 m, 28.08.1995.

35. *Microsphaera astragali* (DC. ex Mérat) Trev.

Material examinat:

Astragalus glycyphyllos L. - Izvorul Alb, 47°25' lat. N, 25°31' long. E, alt. 865 m, 30.09.1993.

36. *Microsphaera baeumleri* Magnus

Material examinat:

Vicia cracca L. - Schitul Rarău, 47°26' lat. N, 25°35' long. E, alt. 1040 m, 8.08.1993.

37. *Microsphaera berberidis* (DC. ex Mérat) Lév.

Material examinat:

Berberis vulgaris L. - Pojorita, 47°31' lat. N, 25°28' long. E, alt. 735 m, 24.06.1994.

38. *Microsphaera euonymi* (DC.) Sacc.

Material examinat:

Euonymus europaeus L. - Pojorita, 47°31' lat. N, 25°28' long. E, alt. 750 m, 25.09.1995.

39. *Microsphaera grossulariae* (Wallr.) Lév.

Material examinat:

Ribes uva-crispa L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 865 m, 16.06.1997.

40. *Microsphaera hedwigii* Lév.

Material examinat:

Viburnum lantana L. - Izvorul Alb, 47°29' lat. N, 25°34' long. E, alt. 730 m, 29.09.1993.41. *Microsphaera penicillata* (Wallr. : Fr.) Lév.

Material examinat:

Alnus incana (L.) Moench - Bodea, 47°30' lat. N, 25°33' long. E, alt. 970 m, 22.09.1994.42. *Microsphaera pseudacaciae* (Marczenko) U. Braun

Material examinat:

Robinia pseudacacia L. (cultivată) - Cîmpulung-Moldovenesc, 47°32' lat. N, 25°35' long. E, alt. 650 m, 26.09.1995.43. *Microsphaera tortilis* (Wallr. : Fr.) Speer

Material examinat:

Cornus sanguinea L. (cultivată) - Pojorîta, 47°31' lat. N, 25°30' long. E, alt. 725 m, 25.09.1995.44. *Microsphaera sambucicola* Henn.

Material examinat:

Sambucus racemosa L. - Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 670 m, 28.08.1994; Pojorîta, 47°30' lat. N, 25°31' long. E, alt. 920 m, 12.08.1996; Colbu, 16.09.1996; Defileul Bistriței la Zugreni, 47°25' lat. N, 25°31' long. E, alt. 750 m, 16.06.1997. (Foto 5)4. Genul *Phyllactinia* Lév.45. *Phyllactinia fraxini* (DC.) Fuss

Material examinat:

Fraxinus excelsior L. - Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 670 m, 28.08.1995.46. *Phyllactinia guttata* (Wallr. : Fr.) Lév.

Material examinat:

Alnus incana (L.) Moench - Bodea, 47°30' lat. N, 25°34' long. E, alt. 800 m, 22.09.1994.*Betula pendula* Roth - Chiril, 47°24' lat. N, 25°34' long. E, alt. 865 m, 8.08.1993. (Foto 6)*Corylus avellana* L. - Bodea, 47°30' lat. N, 25°34' long. E, alt. 850 m, 24.09.1995; Pojorîta (Eva), 47°31' lat. N, 25°29' long. E, alt. 785 m, 25.09.1995; Chiril, 47°24' lat. N, 25°34' long. E, alt. 750 m, 15.09.1996; Colbu, 47°26' lat. N, 25°31' long. E, alt. 875 m, 16.09.1996.*Fagus sylvatica* L. - Izvorul Alb, 47°29' lat. N, 25°33' long. E, alt. 865 m, 15.09.1996.

5. Genul *Podosphaera* Kunze47. *Podosphaera clandestina* (Wallr. : Fr.) Lév.

Material examinat:

Crataegus monogyna Jacq. - Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 650 m, 25.09.1994.48. *Podosphaera leucotricha* (Ellin et Ev.) Salmon

Material examinat:

Malus domestica Borkh. (cultivată) - Pojorîta, 47°31' lat. N, 25°29' long. E, alt. 700 m, 24.06.1994.49. *Podosphaera tridactyla* (Wallr.) De Bary

Material examinat:

Prunus domestica L. (cultivată) - Pojorîta, 47°31' lat. N, 25°29' long. E, alt. 700 m, 25.09.1995.6. Genul *Sawadea* Miyabe50. *Sawadea bicornis* (Wallr. : Fr.) Homma

Material examinat:

Acer pseudoplatanus L. - Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 685 m, 28.08.1995; Pojorîta (Eva), 47°31' lat. N, 25°29' long. E, alt. 855 m, 15.08.1996; Chiril, 47°24' lat. N, 25°34' long. E, alt. 865 m, 15.09.1996; Colbu, 47°26' lat. N, 25°31' long. E, alt. 875 m, 16.08.1996.7. Genul *Sphaerotheca* Lév.51. *Sphaerotheca aphanis* (Wallr.) U. Braun

Material examinat:

Alchemilla obtusa Buser - Vârful Rarău, 47°27' lat. N, 25°35' long. E, alt. 1610 m, 16.07.1994; Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1410 m, 25.08.1994; Pojorîta (Eva), 47°31' lat. N, 25°29' long. E, alt. 855 m, 15.08.1996; Chiril, 47°24' lat. N, 25°34' long. E, alt. 865 m, 15.09.1996; Colbu, 47°26' lat. N, 25°31' long. E, alt. 875 m, 16.08.1996.*Agrimonia eupatoria* L. - Colbu, 47°26' lat. N, 25°31' long. E, alt. 875 m, 16.09.1996.*Geum urbanum* L. - Colbu, 47°26' lat. N, 25°31' long. E, alt. 820 m, 16.09.1996.*Potentilla recta* L. - Chiril, 47°24' lat. N, 25°34' long. E, alt. 850 m, 15.09.1996.52. *Sphaerotheca balsaminae* (Wallr.) Kari

Material examinat:

Impatiens noli-tangere L. - Valea Seacă, 47°30' lat. N, 25°33' long. E, alt. 750 m, 7.08.1993; Moara Dracului, 47°28' lat. N, 25°37' long. E, alt. 750 m, 28.08.1994.53. *Sphaerotheca dipsacacearum* (L. R. Tul. & C. Tul.) L. Junell

Material examinat:

Dipsacus fullonum L. - Izvorul Alb, 47°29' lat. N, 25°33' long. E, alt. 735 m, 8.08.1993.

54. *Sphaerotheca epilobii* (Wallr. ex Link) Sacc.

Material examinat:

Epilobium montanum L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 760 m, 16.07.1994.

Epilobium parviflorum Schreber - Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 640 m, 28.08.1994.

55. *Sphaerotheca erigerontis canadensis* (Lév.) L. Junell

Material examinat:

Conyza canadensis (L.) Cronq. - Izvorul Alb, 47°29' lat. N, 25°33' long. E, alt. 735 m, 13.08.1996.

56. *Sphaerotheca euphorbiae* (Cast.) Salmon

Material examinat:

Euphorbia cyparissias L. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 760 m, 16.09.1996; 16.06.1997.

57. *Sphaerotheca fuliginea* (Schlecht. : Fr.) Poll.

Material examinat:

Veronica chamaedrys L. s.l. - Izvorul Alb, 47°29' lat. N, 25°33' long. E, alt. 885 m, 10.08.1993; Colbu, 47°25' lat. N, 25°31' long. E, alt. 760 m, 16.07.1994; Moara Dracului, 47°28' lat. N, 25°37' long. E, alt. 750 m, 28.08.1994.

Veronica montana L. - Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 640 m, 28.08.1994.

Veronica urticifolia Jacq. - Moara Dracului, 47°28' lat. N, 25°37' long. E, alt. 750 m, 28.08.1994; Pojorîta (Eva), 47°31' lat. N, 25°29' long. E, alt. 990 m, 25.09.1995; Pietrele Doamnei, 47°27' lat. N, 25°34' long. E, alt. 1630 m, 29.09.1995; Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1410 m, 25.08.1994; Popii Rarăului, 47°27' lat. N, 25°35' long. E, alt. 1627 m, 30.09.1995.

58. *Sphaerotheca fusca* (Fr.) Blumer

Material examinat:

Arnica montana L. - Todirescu, 47°26' lat. N, 25°37' long. E, alt. 1410 m, 7.08.1993.

Senecio nemorensis L. subsp. *fuchsii* (C.C. Gmelin) Čelak. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 760 m, 16.07.1994; Moara Dracului, 47°28' lat. N, 25°37' long. E, alt. 750 m, 28.08.1994; Pojorîta (Eva), 47°31' lat. N, 25°29' long. E, alt. 990 m, 25.09.1995.

Senecio squalidus L. - Moara Dracului, 47°28' lat. N, 25°37' long. E, alt. 750 m, 28.08.1994; Pojorîta (Eva), 47°31' lat. N, 25°29' long. E, alt. 990 m, 25.09.1995.

59. *Sphaerotheca helianthemii* L. Junell

Material examinat:

Helianthemum nummularium (L.) Miller - Vârful Rarău, 47°27' lat. N, 25°35' long. E, alt. 1610 m, 24.08.1994; Popii Rarăului, 47°27' lat. N, 25°35'

long. E, alt. 1627 m, 25.08.1994; Piatra Șoimului, 47°27' lat. N, 25°33' long. E, alt. 1545 m, 25.09.1994; Pietrele Doamnei, 47°27' lat. N, 25°34' long. E, alt. 1630 m, 29.09.1995.

60. *Sphaerotheca macularis* (Wallr. : Fr.) Lind

Material examinat:

Humulus lupulus L. (cultivată) - Pojorîta, 47°31' alt. N, 25°29' long. E, alt. 680 m, 12.08.1995.

61. *Sphaerotheca mors-uvae* (Schwen.) Berk. & Curt.

Material examinat:

Ribes uva-crispa L. - Pojorîta, 47°31' lat. N, 25°29' long. E, alt. 856 m, 23.06.1994; Defileul Bistriței la Zugreni, 47°24' lat. N, 25°31' long. E, alt. 760 m, 16.06.1997.

62. *Sphaerotheca pannosa* (Wallr. : Fr.) Lév.

var. *rosae* Woronichin

Material examinat:

Rosa canina L. - Izvorul Alb, 47°29' lat. N, 25°33' long. E, alt. 885 m, 7.08.1993; Pojorîta (Eva), 47°31' lat. N, 25°29' long. E, alt. 990 m, 25.09.1995.

63. *Sphaerotheca phteirospermi* Henn. & Shirai

Material examinat:

Euphrasia rostkoviana Hayne - Defileul Bistriței la Zugreni, 47°24' lat. N, 25°31' long. E, alt. 760 m, 16.09.1996.

Melampyrum sylvaticum L. - Pojorîta, 47°31' lat. N, 25°29' long. E, alt. 815 m, 12.08.1995.

64. *Sphaerotheca spiraeae* Sawada emend. U. Braun

Material examinat:

Filipendula ulmaria (L.) Maxim. s.l. - Colbu, 47°25' lat. N, 25°31' long. E, alt. 889 m, 16.08.1995.

8. Genul *Uncinula* Lév.

65. *Uncinula adunca* (Wallr. : Fr.) Lév.

Material examinat:

Populus nigra L. - Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 670 m, 26.09.1995.

Salix caprea L. - Izvorul Alb, 47°29' lat. N, 25°33' long. E, alt. 885 m, 30.09.1993.

Salix purpurea L. subsp. *purpurea* - Izvorul Alb, 47°29' lat. N, 25°33' long. E, alt. 755 m, 29.09.1993; Colbu, 47°25' lat. N, 25°31' long. E, alt. 875 m, 16.09.1996.

66. *Uncinula clandestina* (Biv. - Bern.) Schroet.

Material examinat:

Ulmus minor Miller - Valea Caselor, 47°30' lat. N, 25°37' long. E, alt. 670 m, 26.09.1995.

Apartenența taxonomică a plantelor gazdă parazitare evidențiază prezența micromicetelor din ordinul *Erysiphales* pe specii din familia *Asteraceae* (25%), *Fabaceae* (13%) și *Lamiaceae* (9%) - Grafic nr. 1.

Spectrul bioformelor plantelor gazdă semnaleză un număr reprezentativ de micromicete parazite pe hemicriptofite (73%), urmate de phanerofite (13%), terofite (10%), chamefite și geofite (2%) - Grafic nr. 2.

Din analiza elementelor fitogeografice a plantelor gazdă se remarcă prezența micromicetelor parazite pe elemente eurasiatice (37%), urmate de speciile europene și din Europa centrală (20%), circumpolare (11%), iar pe endemite carpatice (3%) - Grafic nr. 3.

Dinamica lunară a speciilor de micromicete din Masivul Rarău evidențiază pentru luna septembrie 68 de probe, 53 de probe pentru luna august, pentru iunie și iulie 7 probe, iar pentru octombrie doar 4 probe - Grafic nr. 4.

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C. Tănase et colab.



Foto 1 – *Erysiphe aquilegiae* DC. pe *Caltha palustris* L.
cleistorecie

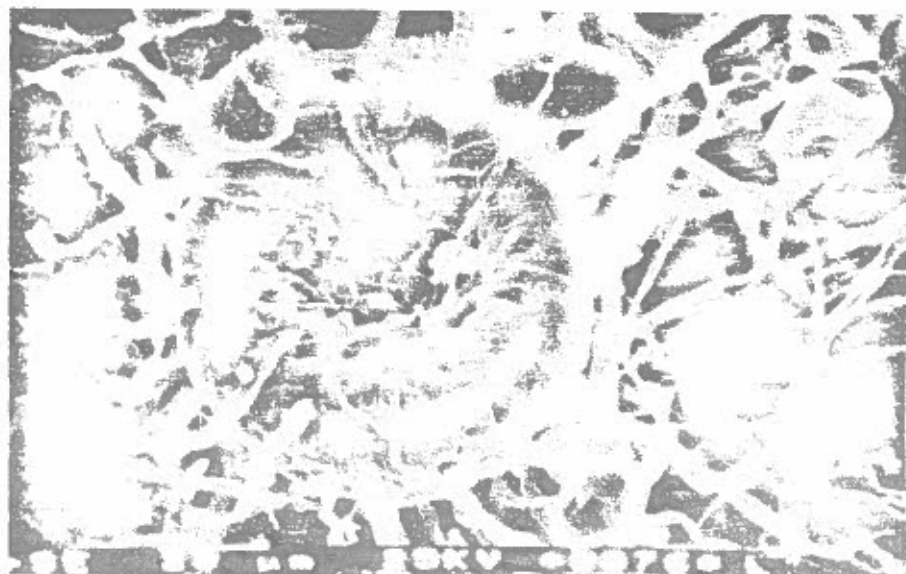


Foto 2 – *Erysiphe cichoracearum* DC. pe *Cirsium erithales* (Jacq.) Scop.
cleistorecie

C. Tănăs^e et colab.

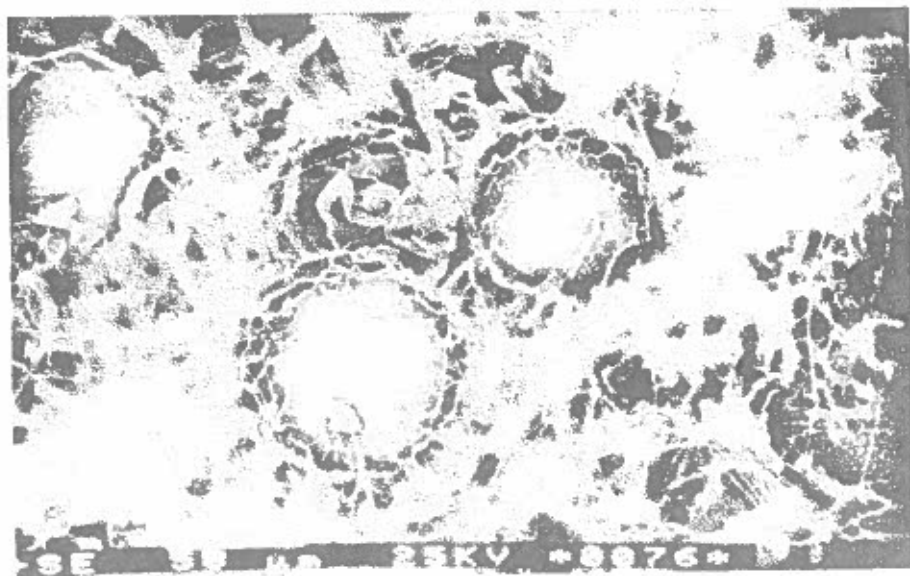


Foto 3 – *Erysiphe pisi* DC. pe *Vicia sepium* L.
cleistotecie

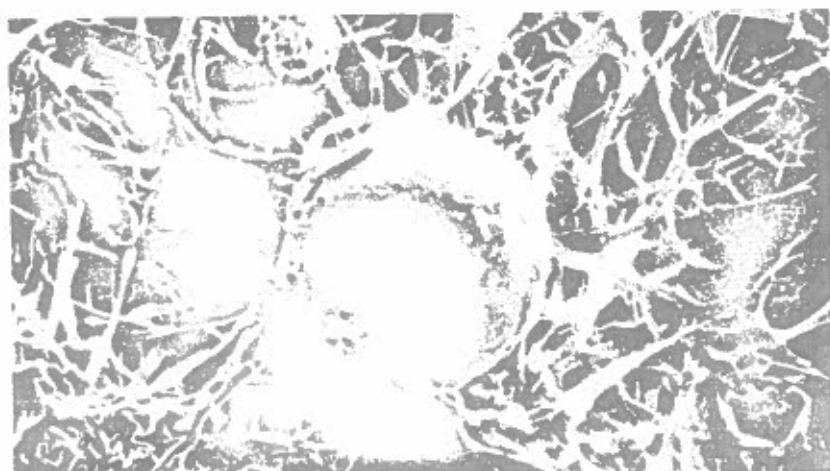


Foto 4 – *Erysiphe ranunculi* Grev. pe *Aconitum tauricum* Wulf.
(combinare nouă pentru România)
cleistotecie

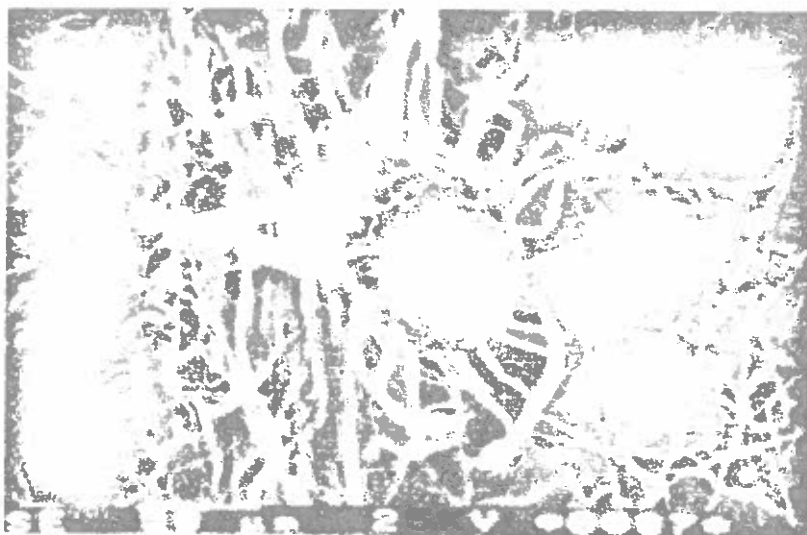


Foto 5 – *Microsphaera sambucicola* Henn. pe *Sambucus racemosa* L.
cleistotecie

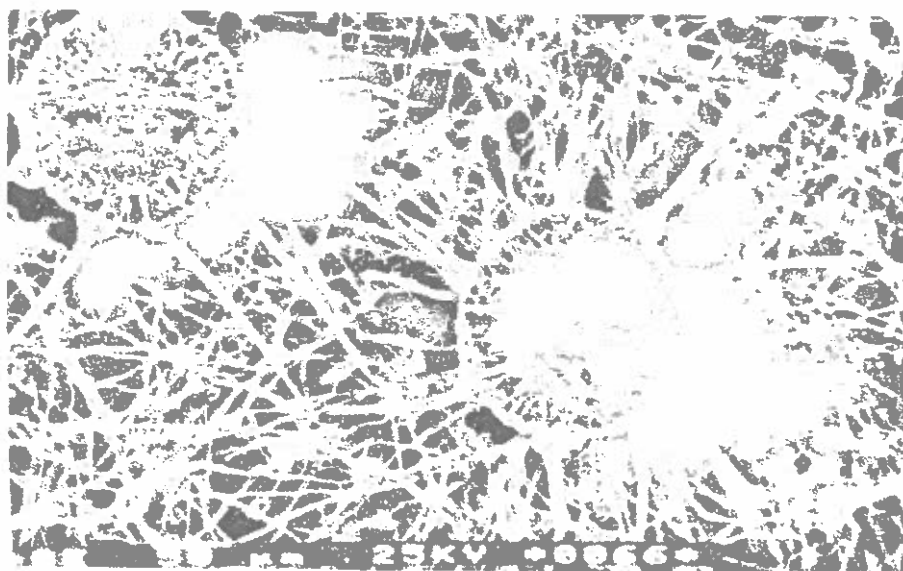


Foto 6 – *Phyllactinsa glutata* (Wallr. Fr.) Sév. pe *Betula pendula* Roth
cleistotecie