

# Illustrated Catalogue of Hering's herbarium of leafminers at the Natural History Museum Vienna, part 3 (plant families F)

M. Lödl, S. Gaal-Haszler & S. Jovanovic-Kruspel

---

## Abstract

The authors present in this illustrated catalogue the third part of the historical herbarium of leafminers of the Natural History Museum in Vienna obtained from Erich Martin Hering. The dried plants are documented in overview and detail photos of the leaf mines are given. 47 leaf mining species of 10 families are represented.

## Zusammenfassung

Die Autoren präsentieren in diesem illustrierten Katalog den dritten Teil des historischen Minenherbars des Naturhistorischen Museums in Wien, das von Erich Martin Hering erworben wurde. Die getrockneten Pflanzen werden im Überblick dokumentiert, und Detailaufnahmen der Blattminen werden gezeigt. 47 blattminierende Arten aus 10 Familien sind vertreten.

**Key words:** Coleophoridae, Eriocraniidae, Gracillariidae, Lyonetiidae, Nepticulidae, Psychidae, Tischeriidae, Diptera, Agromyzidae, Coleoptera, Curculionidae, Hymenoptera, Tenthredinidae, herbarium of leafminers, leafmines, Natural History Museum Vienna, Hering, Fabaceae, Fagaceae.

---

## Introduction

The Natural History Museum in Vienna (NHMW) houses a historical herbarium of leafminers. This catalogue is concentrating on the rich collection of leafminers obtained from Prof. Dr. Erich Martin Hering (Berlin) in the 1920's and 1930's. The collection was presented in 22 booklets containing original material collected by Hering mainly in Germany, Austria, Spain, France, and Moldavia.

Altogether more than 440 dried plant specimens representing more than 300 different leafmining species, mainly Lepidoptera and Diptera (Agromyzidae) but also some Hymenoptera and Coleoptera, can be found in the herbarium.

The first two parts of the catalogue (LÖDL et al. 2012, 2014) deal with the plant families beginning with the letters A to E. In this third part (plant families beginning with the letter F), 47 leaf mining species of 10 families are represented.

## Materials and Methods

Hering's herbarium of leafminers at the NHMW is structured in 22 booklets (lots), each containing 20 herbarium sheets which are numbered consecutively. In the here presented illustrated catalogue the leaf or the leaves on the herbarium sheets are shown in overview and detail photos of the mines are given. At the top of the page plant family name and plant species name are written in bold, followed by the valid name of the leafminer species in bold italic.

At the bottom of the page lot number and herbarium sheet number are given. In square brackets the names printed on the booklet and the sheet are given, if they differ from the valid names. Handwritten corrections of NHMW curators are also written in square brackets. In the last line of the page collecting data can be found.

The plant families are listed in alphabetical order, the genera and the species of the families follow the alphabet as well. Because of that, no plant index is given at the end of the catalogue. This article contains the plant families beginning with the letter F (Fabaceae and Fagaceae).

Fabaceae

**Anthyllis cytisoides L.**

*Coleophora vestalella* STAUDINGER, 1859 (Lepidoptera: Coleophoridae)



Leafminers-Herbarium, M.Hering, Lot 14, no. 274  
Totana, Prov. Murcia Mai 1933

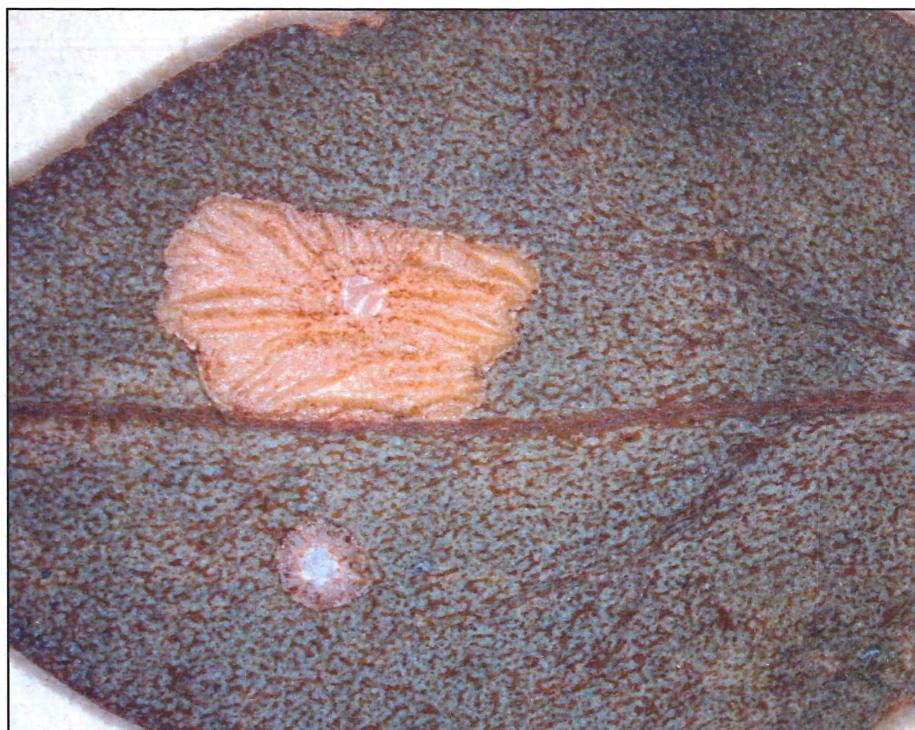
Fabaceae

**Anthyllis cytisoides L.**

*Coleophora vestalella* STAUDINGER, 1859 (Lepidoptera: Coleophoridae)



Details of previous page. Top: left leaf with blotch mines without frass. Bottom: right leaf; blotch mine with circular hole.



Fabaceae

**Astragalus glycyphyllos L.**

*Phytoliriomyza variegata* (MEIGEN, 1830) (Diptera: Agromyzidae)

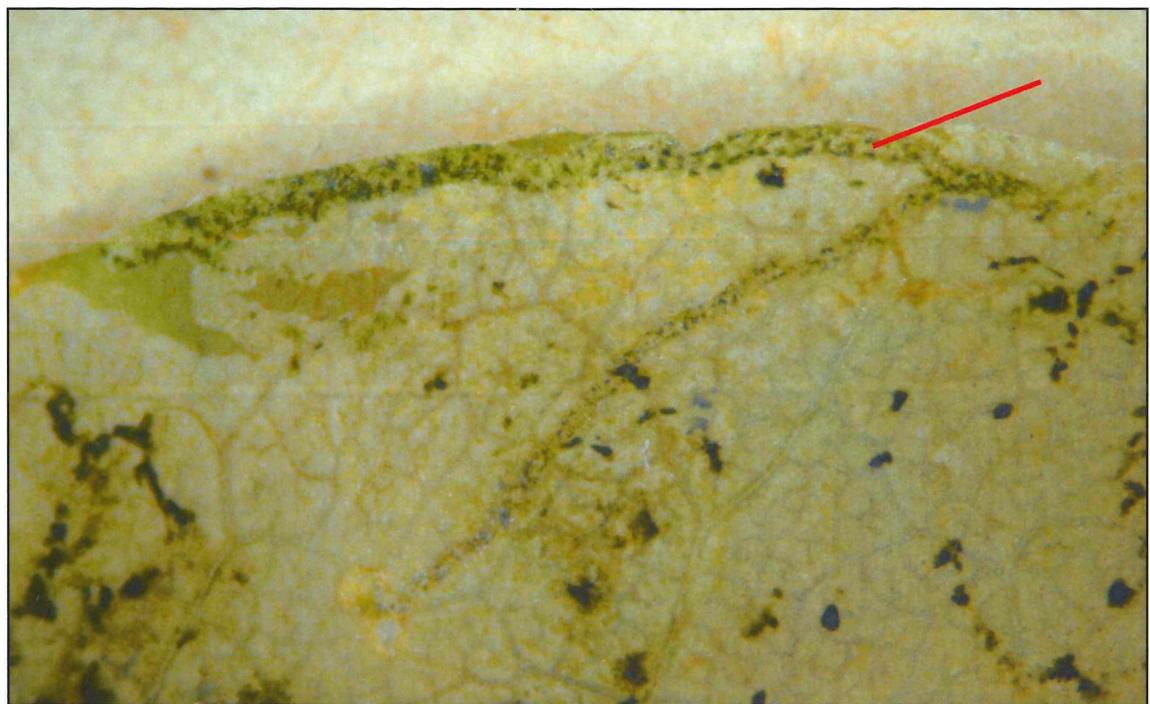


Leafminers-Herbarium, M.Hering, Lot 5, no. 91  
[*Liriomyza variegata* Mg.] [*Astragalus glyciphylllos* L.] Berlin, VI. 1930

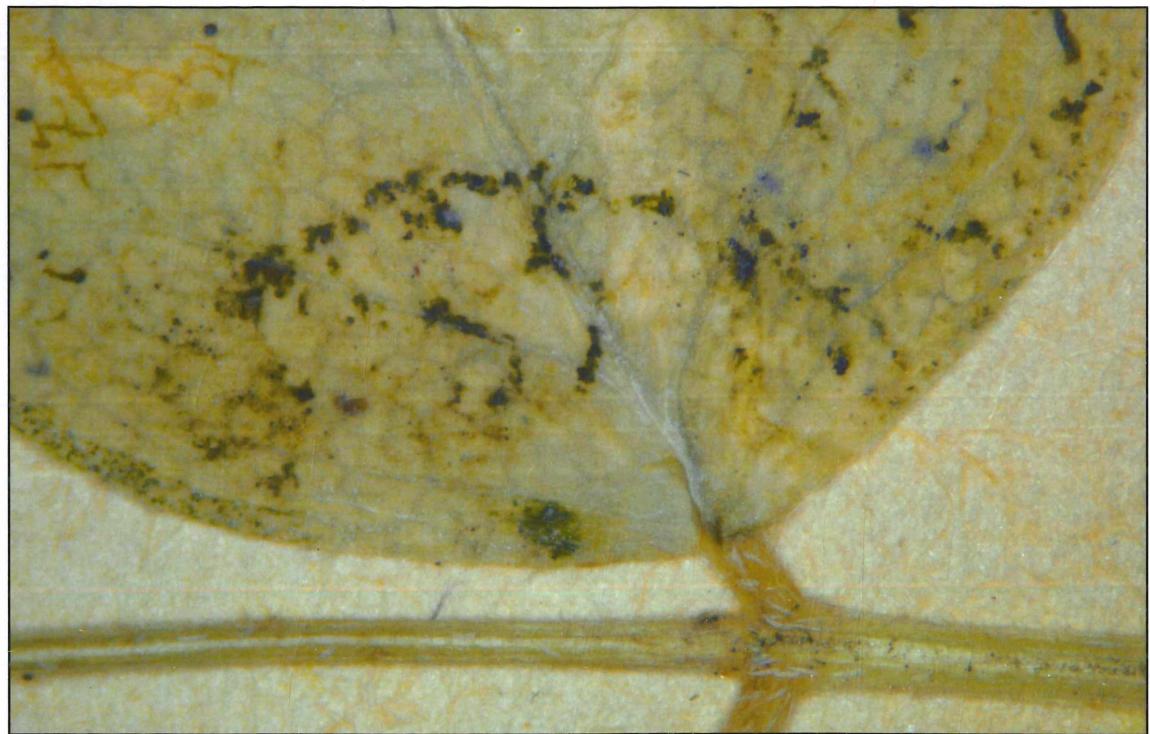
Fabaceae

**Astragalus glycyphyllos L.**

*Phytoliriomyza variegata* (MEIGEN, 1830) (Diptera: Agromyzidae)



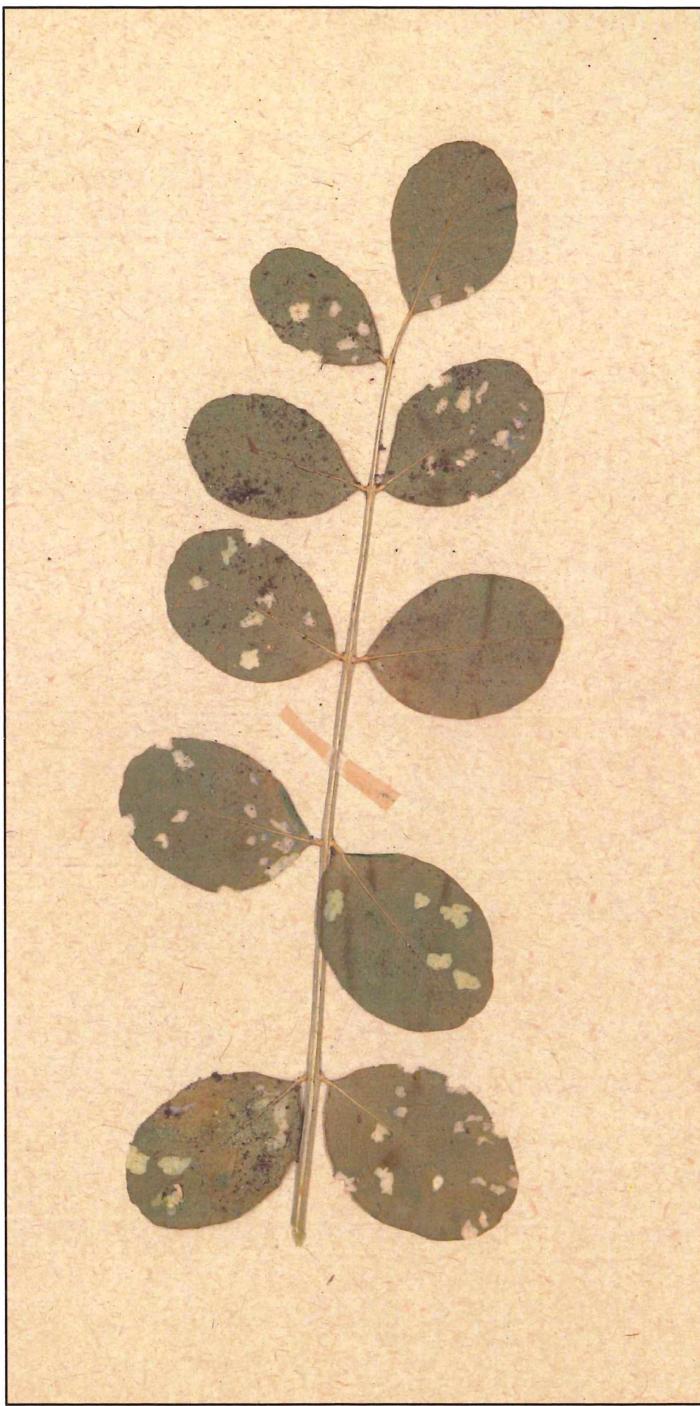
Details of previous page. Top: early corridor alongside leaf margin (red arrow). Bottom: large upper-surface blotch mine.



Fabaceae

**Astragalus glycyphyllos L.**

*Coleophora colutella* (FABRICIUS, 1794) (Lepidoptera: Coleophoridae)

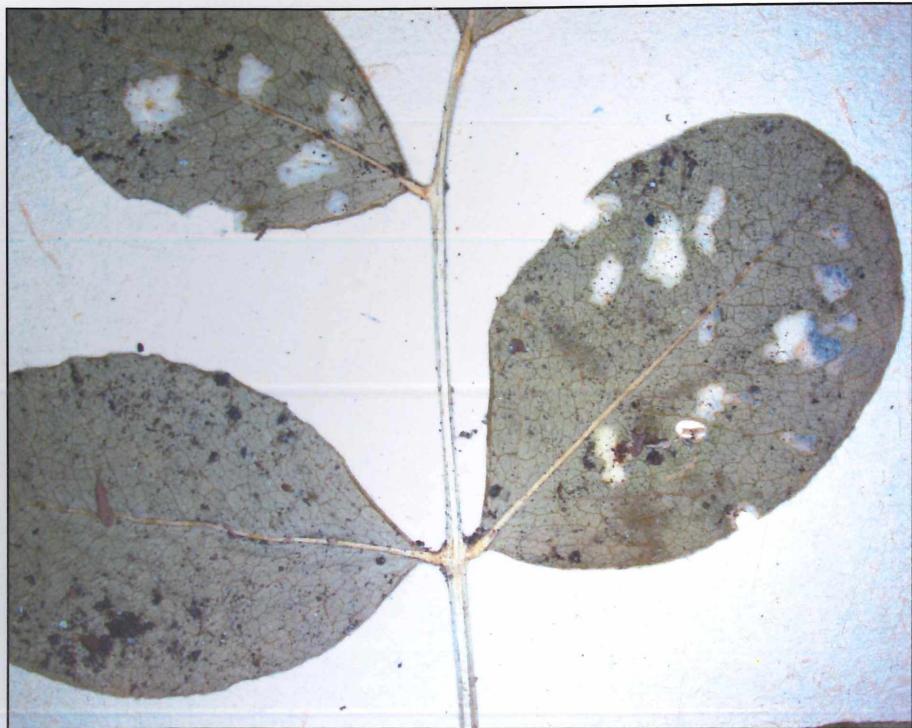


Leafminers-Herbarium, M.Hering, Lot 17, no. 339  
[*Astragalus glycyphyllos* L. emended to *Astragalus glycyphylloides* L.]  
[*Coleophora serenella* Z. emended to *Coleophora crocinella* Tgstr.]  
Crossen/Oder, Brandenburg, Septemb. 1932

Fabaceae

**Astragalus glycyphyllos L.**

*Coleophora colutella* (FABRICIUS, 1794) (Lepidoptera: Coleophoridae)



Details of previous page. Top: numerous small mines (autumn aspect). Bottom: whitish lobe case.



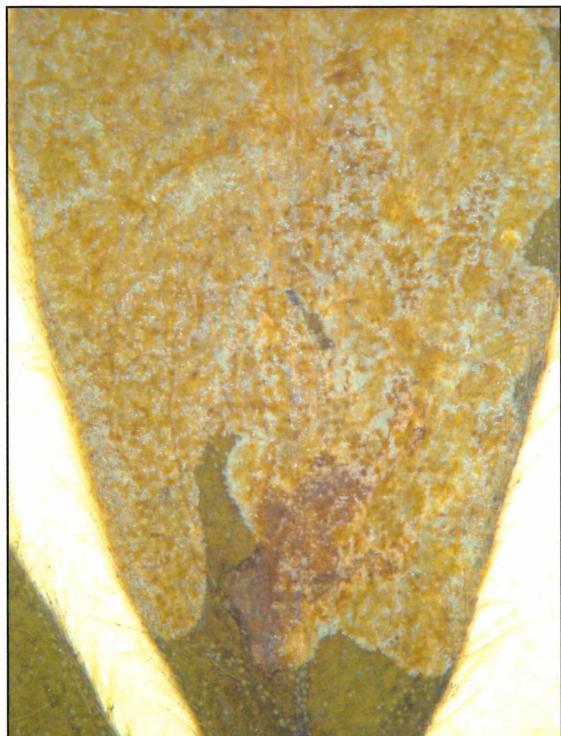
Fabaceae

# Chamaecytisus supinus (L.) Link

*Micrurapteryx kollarieilla* (ZELLER, 1838) (Lepidoptera: Gracillariidae)



Top: overview. Bottom left: leaflet in the middle, branched primary blotch. Bottom right: leaflet right, later blotch occupying almost the entire leaflet.

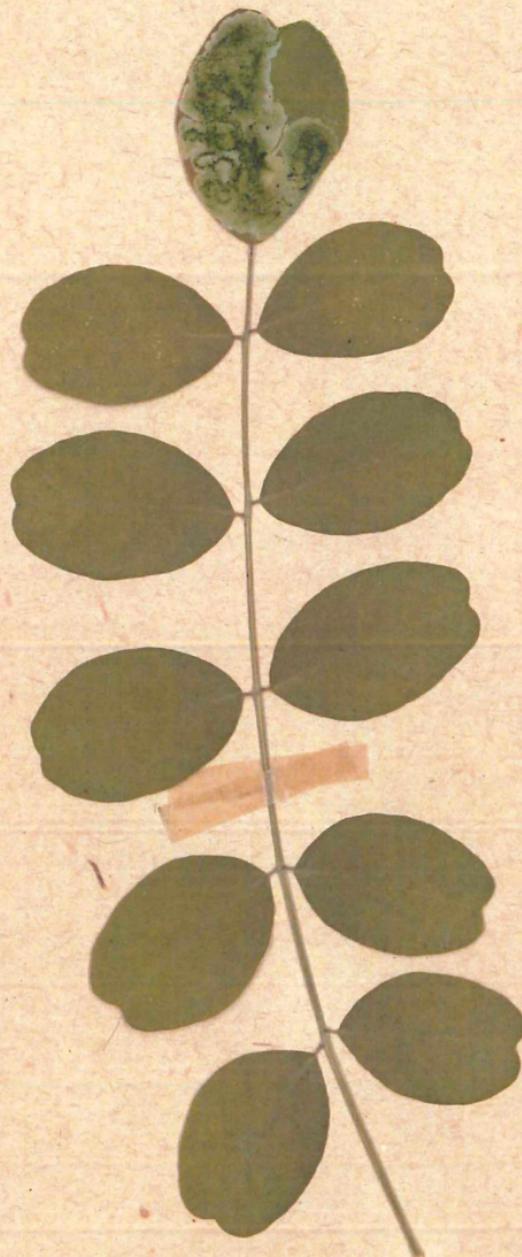


Leafminers-Herbarium, M.Hering, Lot 5, no. 90  
[Gracilaria kollarieilla Zell.] [Cytisus capitatus Jcq.] Berlin, cult. VI. 1930

Fabaceae

# Colutea arborescens L.

*Phytoliriomyza variegata* (MEIGEN, 1830) (Diptera: Agromyzidae)

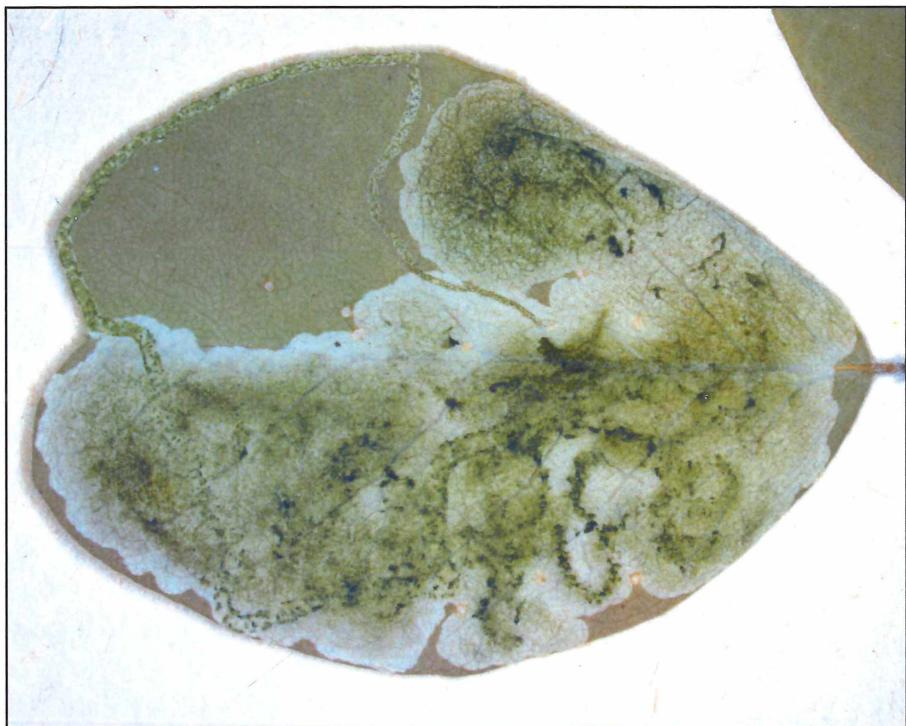


Leafminers-Herbarium, M.Hering, Lot 17, no. 338  
[*Liriomyza variegata* Meigen]  
Berlin, Garten, Juni 1934

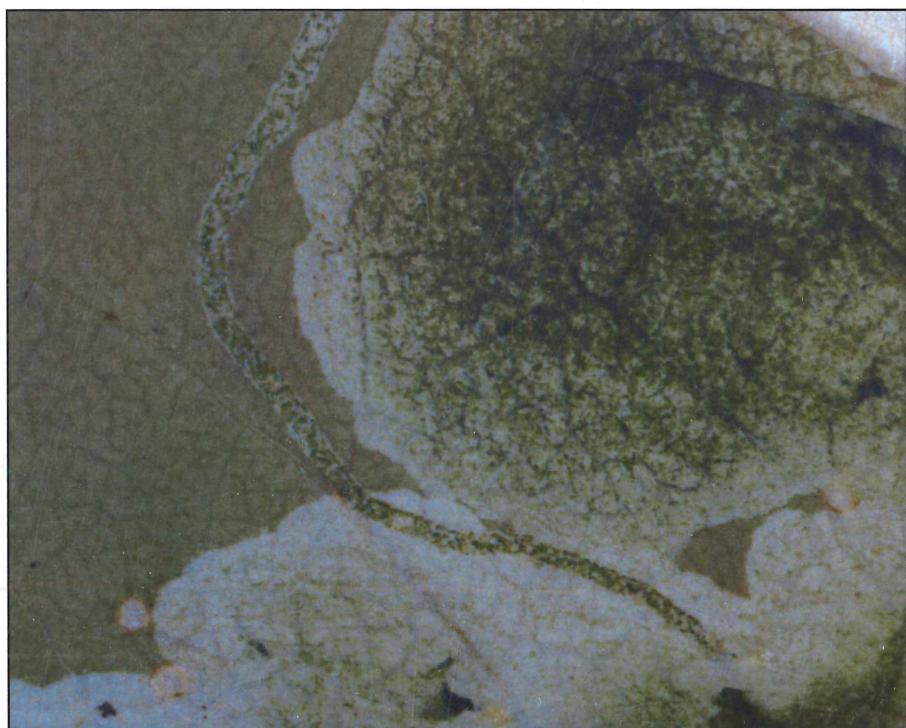
Fabaceae

# Colutea arborea L.

*Phytoliriomyza variegata* (MEIGEN, 1830) (Diptera: Agromyzidae)



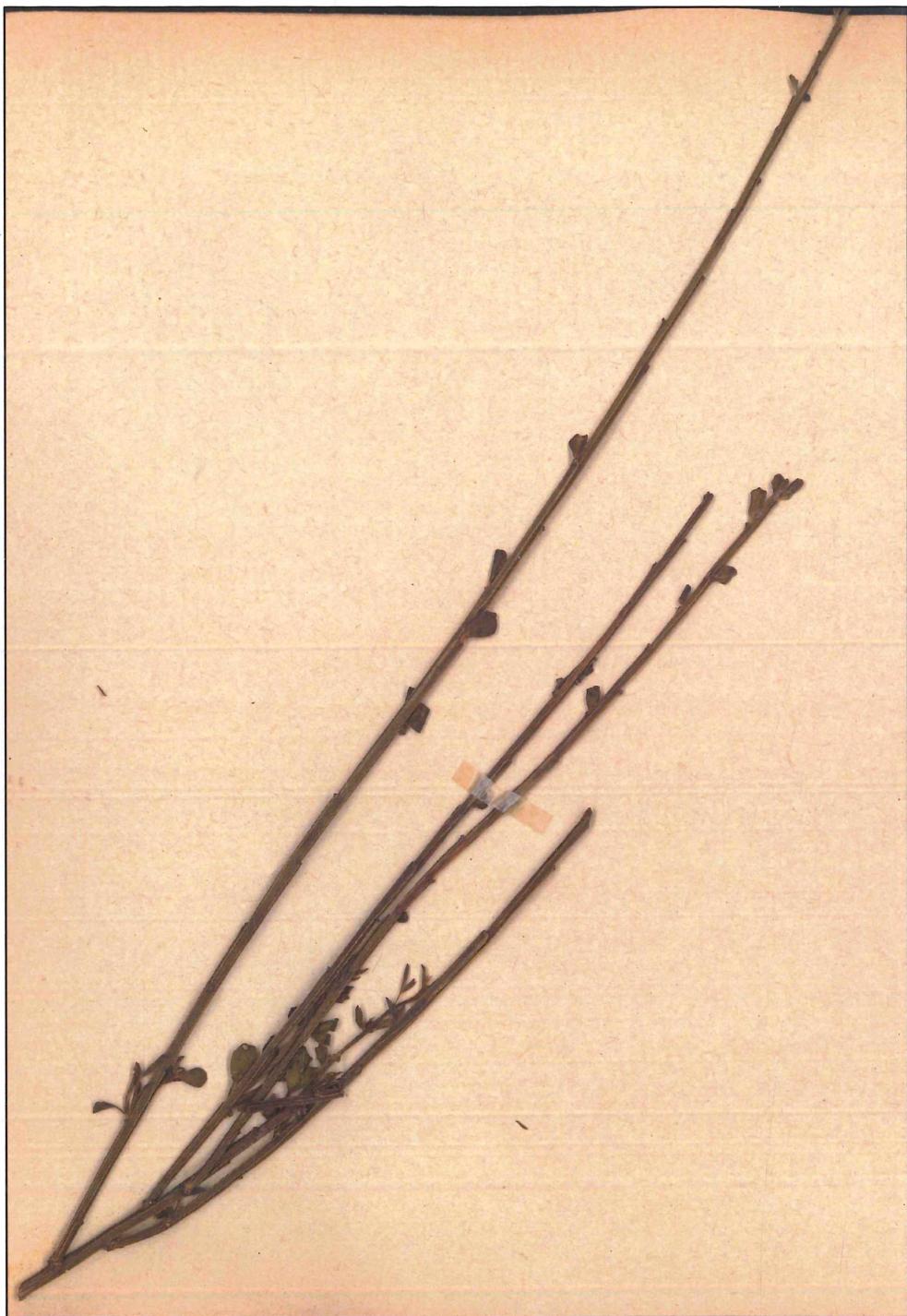
Top: leaflet with starting corridor along leaf margin and later upper-surface blotch. Bottom: detail of blotch with frass in green lumps.



Fabaceae

**Cytisus scoparius (L.) Link**

*Leucoptera spartifoliella* (HÜBNER, [1813]) (Lepidoptera: Lyonetiidae)



Leafminers-Herbarium, M.Hering, Lot 17, no. 335  
[Cytisus scoparius L. emended to Sarothamnus scoparius (L.) Wimm.]  
Berlin – Mittenwalde, Juni 1934

Fabaceae

# Cytisus scoparius (L.) Link

*Leucoptera spartifoliella* (HÜBNER, [1813]) (Lepidoptera: Lyonetiidae)



Details of previous page. Top: mines in stems only, not in leaves. Bottom: detail of elongate mine, without fold in stem.



Fabaceae

**Cytisus scoparius (L.) Link**

*Agromyza johannae* DE MEIJERE, 1924 (Diptera: Agromyzidae)



Leafminers-Herbarium, M.Hering, Lot 17, no. 336  
[*Cytisus scoparius* L. emended to *Sarothamnus scoparius* (L.) Wimm.]  
Berlin – Mittenwalde, Juni 1934

Fabaceae

**Cytisus scoparius (L.) Link**

*Agromyza johannae* DE MEIJERE, 1924 (Diptera: Agromyzidae)



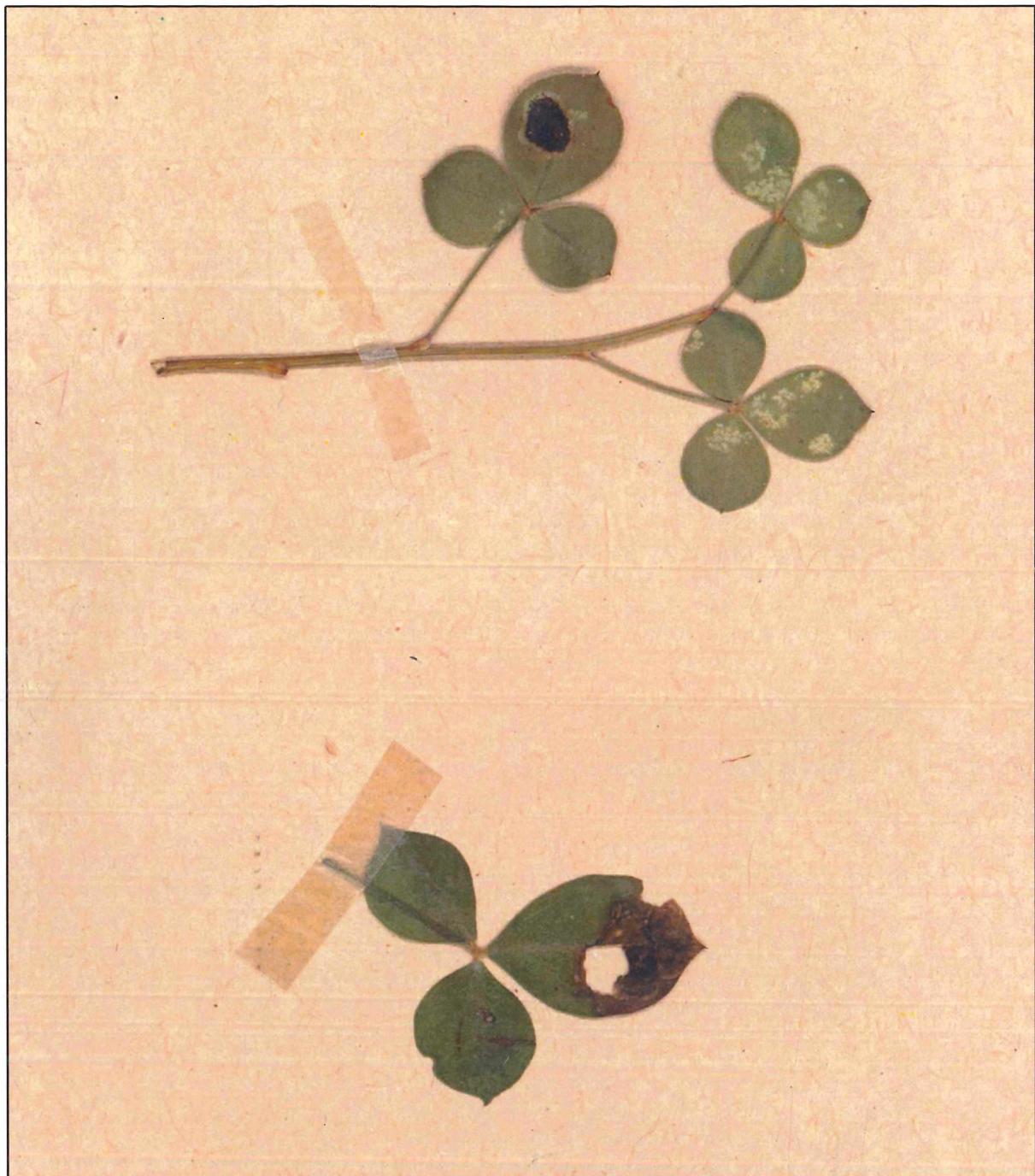
Details of previous page. Top: plant specimen on top of the sheet. Upper surface corridor starts near base of leaflet and widens quickly. Bottom: plant specimen at the bottom of the sheet. Older mine which turned black.



Fabaceae

**Cytisophyllum sessilifolium (L.) O. Lang**

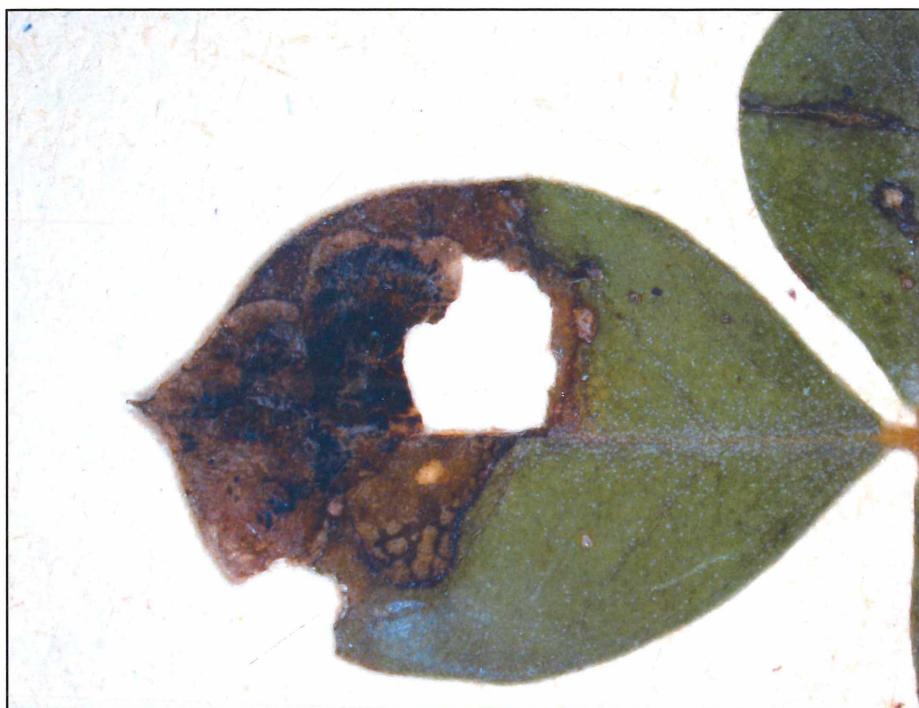
*Leucoptera coronillae* (HERING, 1933) (Lepidoptera: Lyonetiidae)



Leafminers-Herbarium, M.Hering, Lot 14, no. 273  
[*Leucoptera phyllocytisi* Hering emended to *Leucoptera coronillae* Hering]  
Montserrat, Monistrol, Juni 1933

**Cytisophyllum sessilifolium (L.) O. Lang**

*Leucoptera coronillae* (HERING, 1933) (Lepidoptera: Lyonetiidae)



Details of previous page. Blotch mine starts in the centre of the leaflet and develops concentrically with much frass.



Fabaceae

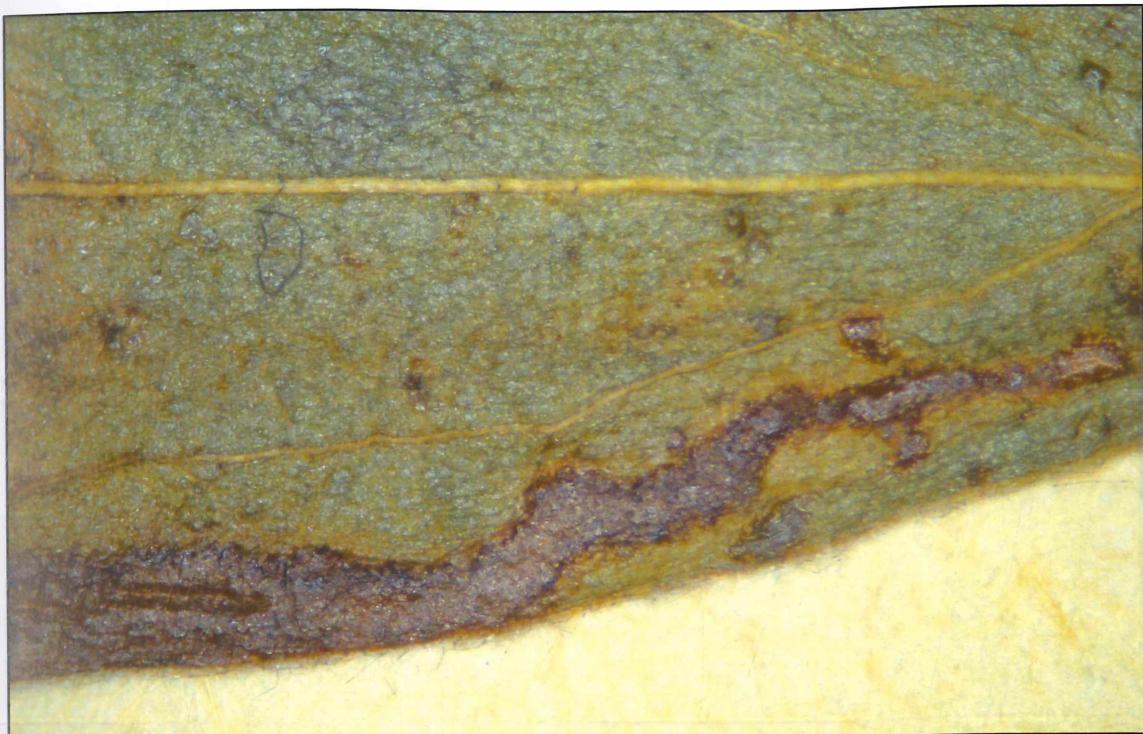
**Genista anglica L.**

*Agromyza pulla* MEIGEN, 1830 (Diptera: Agromyzidae)

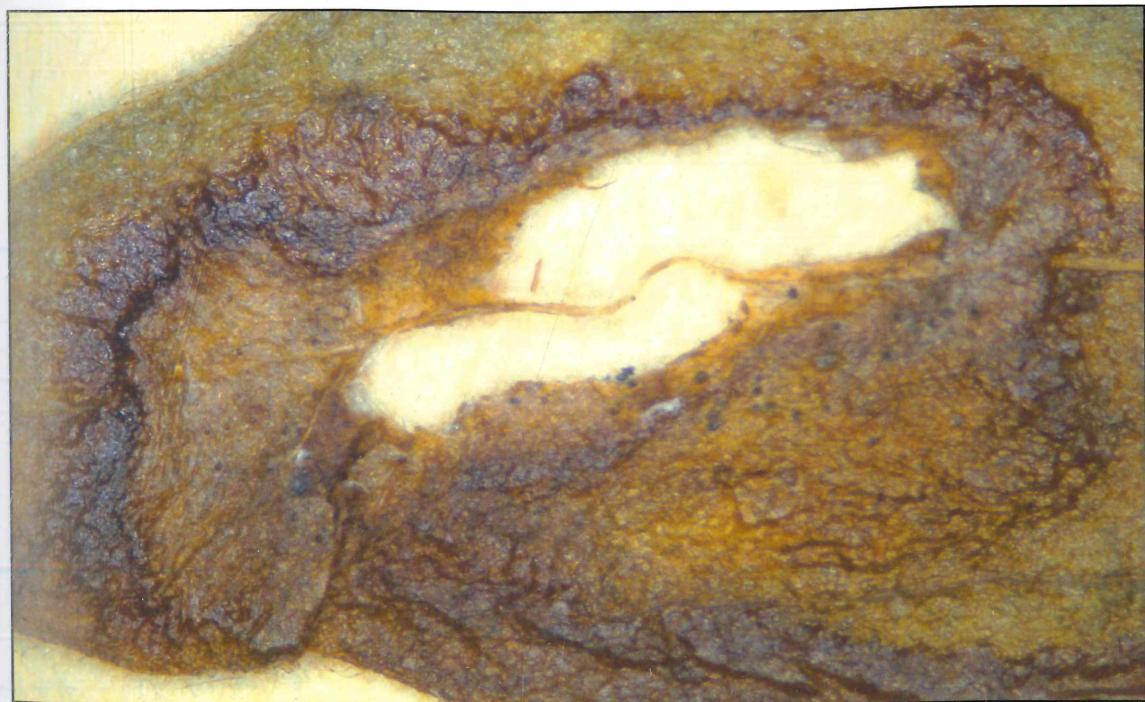


Leafminers-Herbarium, M.Hering, Lot 11, no. 219  
[*Agromyza genistae* Hendel] Lardy bei Paris, Juli 1932

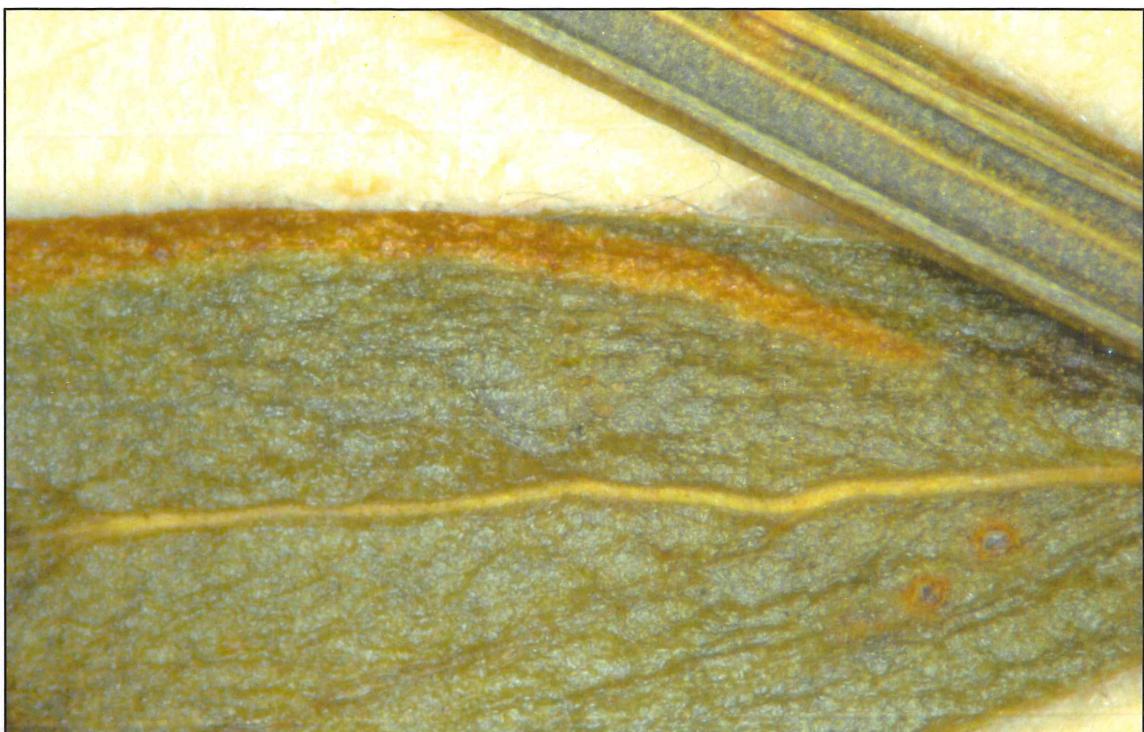
Fabaceae  
**Genista anglica L.**  
*Agromyza pulla* MEIGEN, 1830 (Diptera: Agromyzidae)



Details of previous page (leaflet left). Top: corridor beginning near the base of the leaflet. Bottom: later stage, broader corridor near the leaf tip.



Fabaceae  
**Genista anglica L.**  
*Agromyza pulla* MEIGEN, 1830 (Diptera: Agromyzidae)



Details of page next to last (leaflets on the stem, right). Top: early part of corridor near leaf base, ascending alongside the leaf margin. Bottom: later stage of corridor.



Fabaceae

**Genista tinctoria L.**

*Coleophora vibicella* (HÜBNER, 1813) (Lepidoptera: Coleophoridae)



Leafminers-Herbarium, M.Hering, Lot 19, no. 376  
Kyffhäuser, Thuringia, Juli 1935

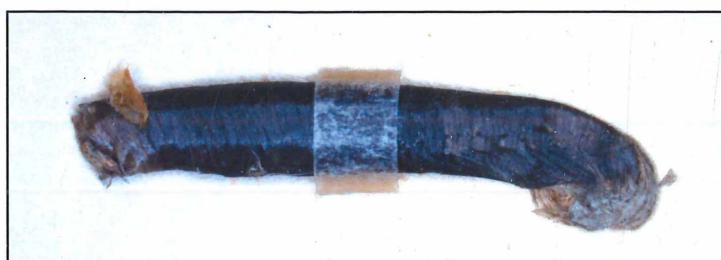
Fabaceae

**Genista tinctoria L.**

*Coleophora vibicella* (HÜBNER, 1813) (Lepidoptera: Coleophoridae)



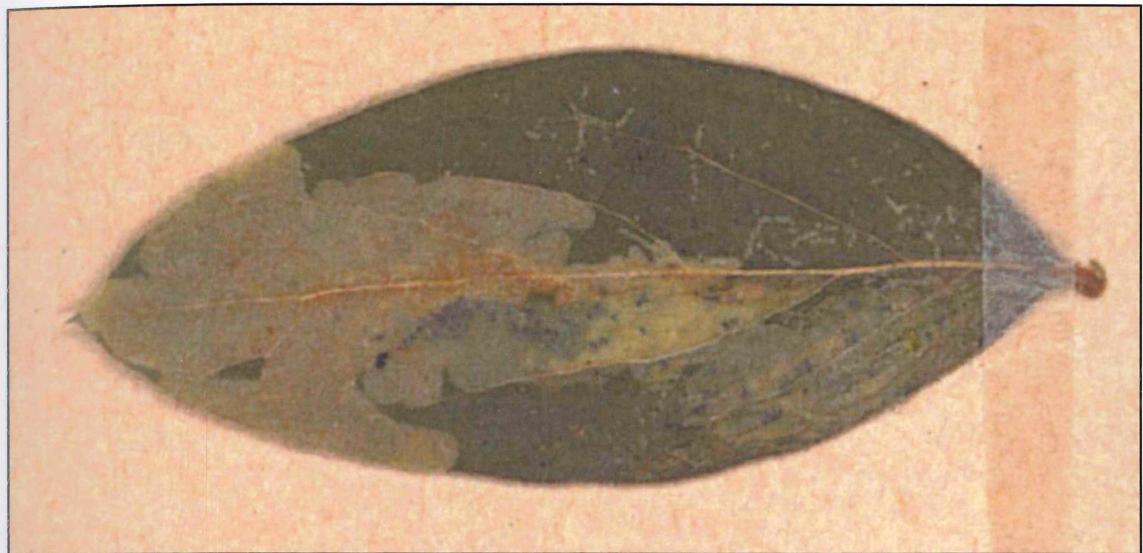
Details of previous page. Top: frassless blotch mine. Bottom: Larva in black tubular case (that is similar to a pod) with rolled in end.



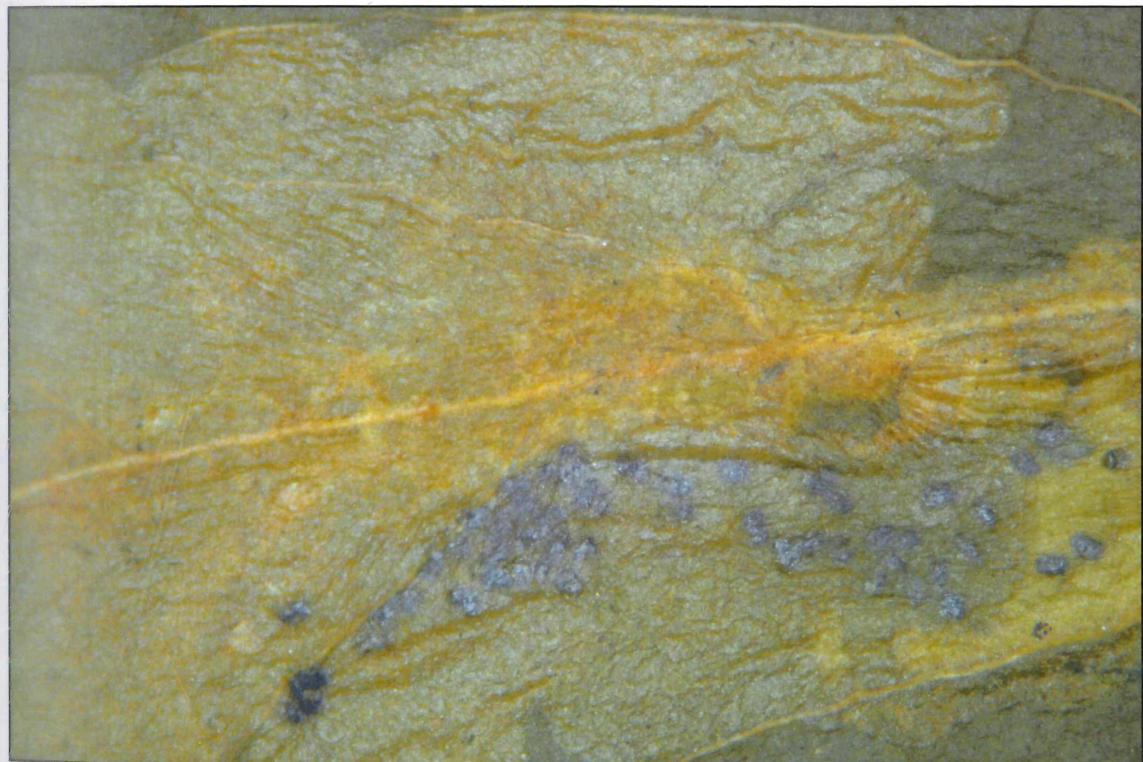
Fabaceae

**Genista tinctoria L.**

*Micrurapteryx kollarieilla* (ZELLER, 1838) (Lepidoptera: Gracillariidae)



Top: overview. Bottom: details of blotch occupying the major part of the leaf.

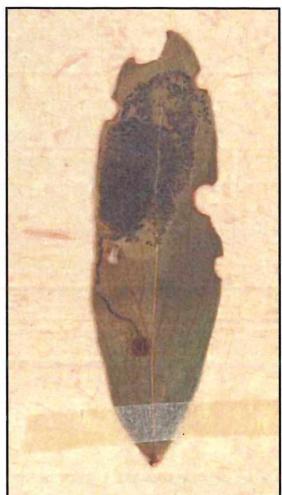


Leafminers-Herbarium, M.Hering, Lot 6, no. 116  
[*Gracilaria kollarieilla* Zell.] Berlin, IX. 1930

Fabaceae

**Genista tinctoria L.**

*Leucoptera laburnella* (STAINTON, 1851) (Lepidoptera: Lyonetiidae)



Leafminers-Herbarium, M.Hering, Lot 11, no. 218  
[Cemostoma wailesella Stt.] Brodowin, Mark [Brandenburg] Juli 1932

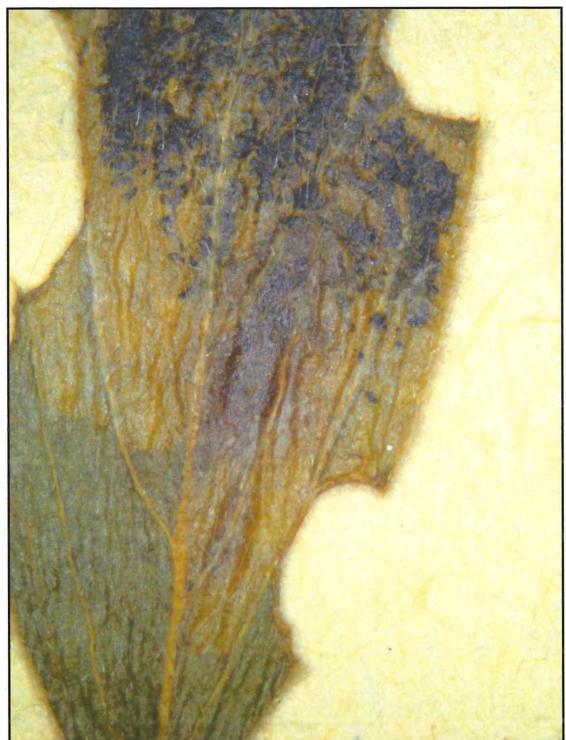
Fabaceae

# Genista tinctoria L.

*Leucoptera laburnella* (STAINTON, 1851) (Lepidoptera: Lyonetiidae)



Details of previous page. Top: brown, strongly contorted initial part of mine with its straight continuation.  
Bottom: different aspects of later blotch stage.



Fabaceae

**Laburnum anagyroides Medik.**

*Phytomyza cytisi* BRISCHKE, 1880 (Diptera: Agromyzidae)



Leafminers-Herbarium, M.Hering, Lot 6, no. 115  
[*Laburnum vulgare* Grsb.] Berlin, VII. 1930

Fabaceae

**Laburnum anagyroides Medik.**

*Phytomyza cytisi* BRISCHKE, 1880 (Diptera: Agromyzidae)



Details of previous page: details of broad, winding corridor.



Fabaceae

**Laburnum anagyroides Medik.**

*Micrurapteryx kollarieilla* (ZELLER, 1838) (Lepidoptera: Gracillariidae)



Leafminers-Herbarium, M.Hering, Lot 17, no. 333  
[*Laburnum vulgare* Grisb. emended to *Laburnum anagyroides* Med.]  
[*Parectopa* (*Gracil[sic]aria*) *kollarieilla* Z. emended to *Micrurapteryx kollarieilla* Z.]  
Berlin, Garten, September 1934

Fabaceae

## Laburnum anagyroides Medik.

*Micrurapteryx kollarieilla* (ZELLER, 1838) (Lepidoptera: Gracillariidae)



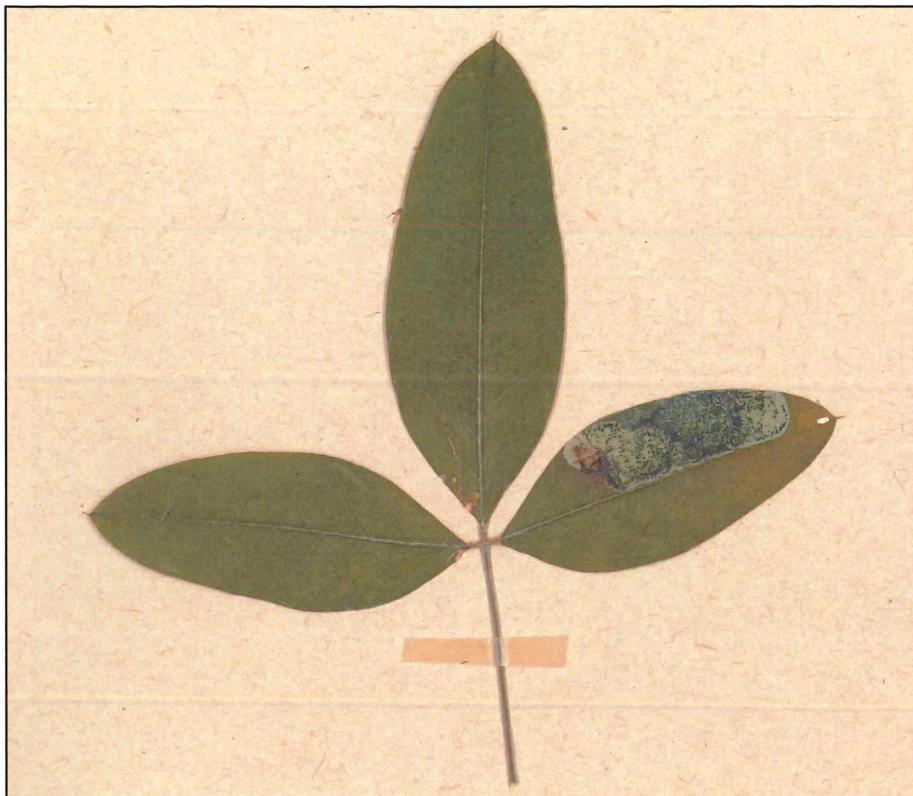
Details of previous page: typically radiating, beginning mines.



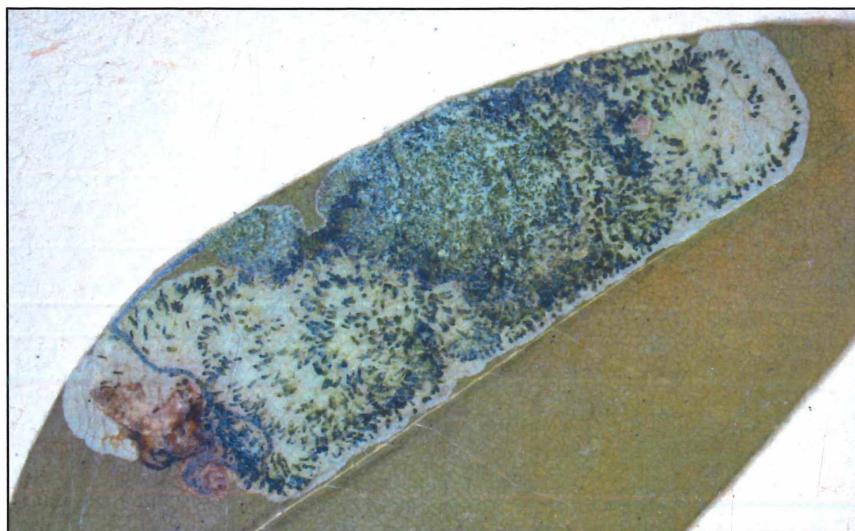
Fabaceae

# Laburnum anagyroides Medik.

*Leucoptera laburnella* (STAINTON, 1851) (Lepidoptera: Lyonetiidae)



Top: overview. Bottom: big rounded blotch mine, with brown beginning part on the left side, near to midrib.

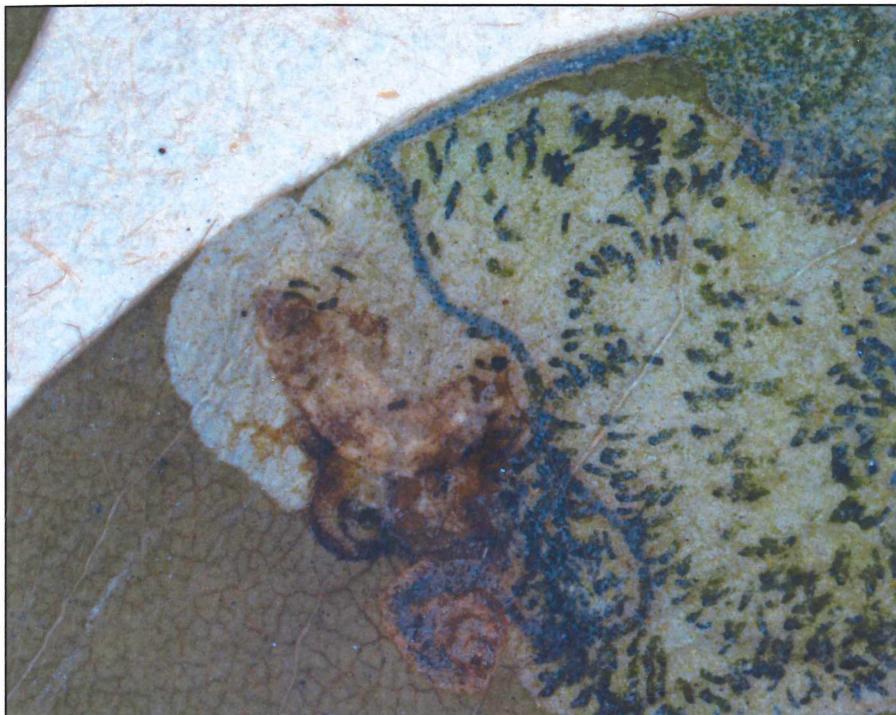


Leafminers-Herbarium, M.Hering, Lot 17, no. 334  
[*Laburnum vulgare* Grisb. emended to *Laburnum anagyroides* Med.]  
Berlin, Garten, September 1934

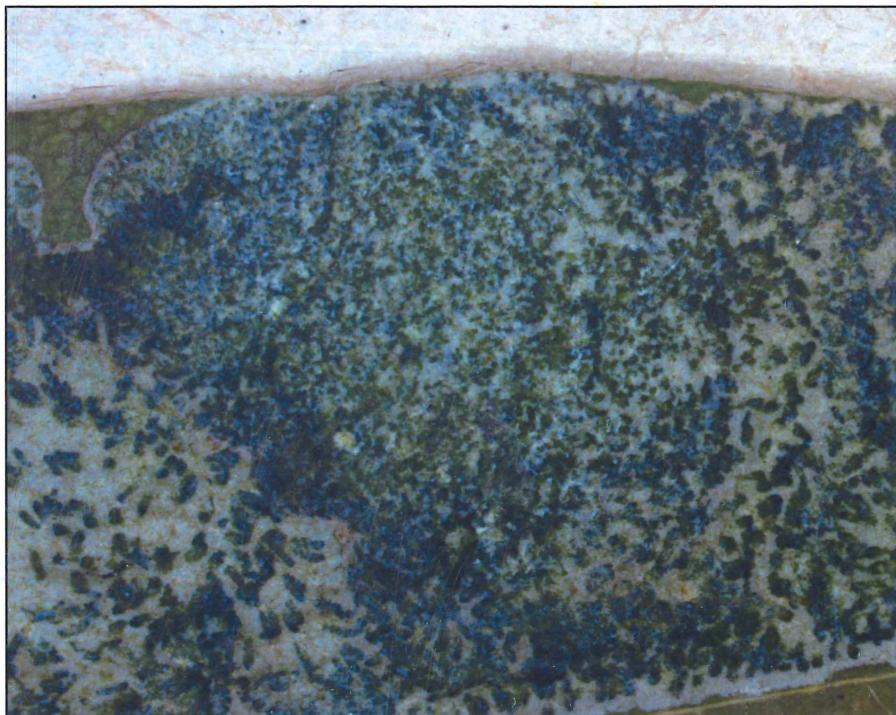
Fabaceae

**Laburnum anagyroides Medik.**

*Leucoptera laburnella* (STAINTON, 1851) (Lepidoptera: Lyonetiidae)



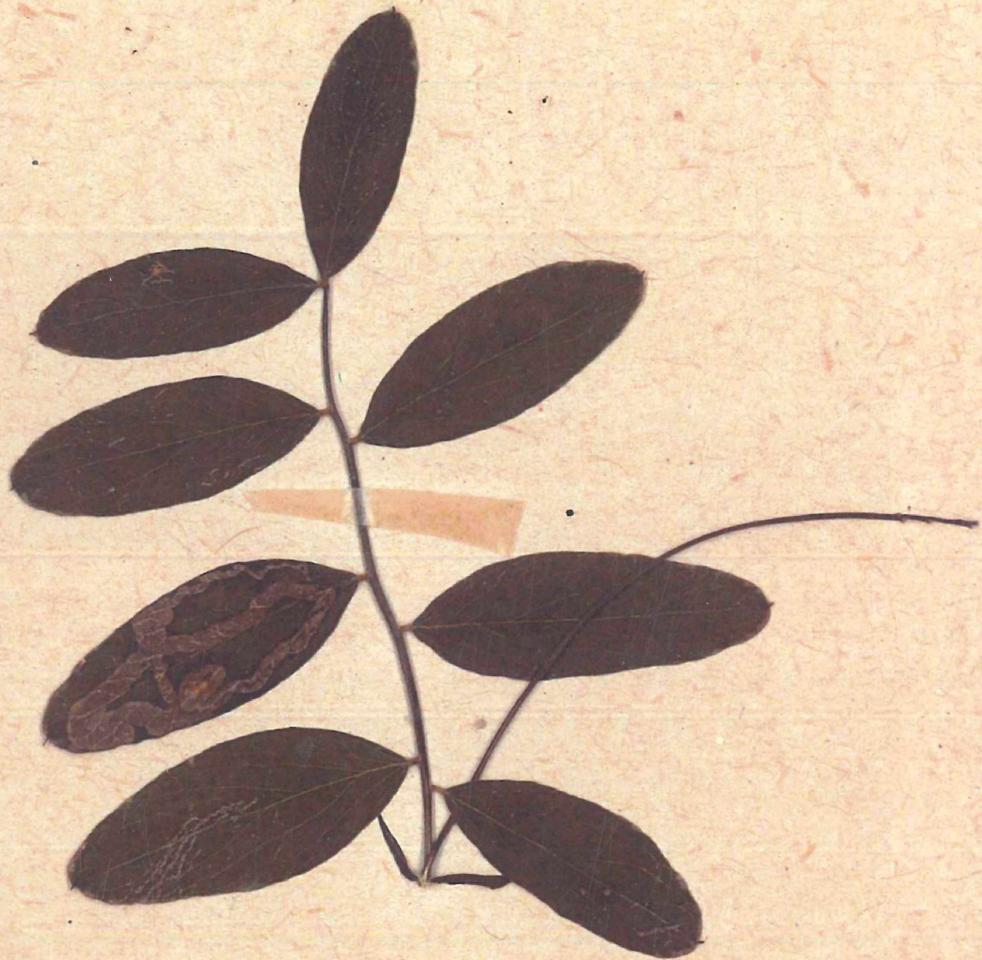
Details of previous page. Top: contorted, brown beginning part of the mine; then straight, filled with grey frass. Larva can be seen above beginning part. Bottom: green and black frass in the blotch mine.



Fabaceae

**Lathyrus niger (L.) Bernh.**

*Liriomyza congesta* (BECKER, 1903) (Diptera: Agromyzidae)



Leafminers-Herbarium, M.Hering, Lot 17, no. 340  
[*Liriomyza congesta* Beck. emended to *Liriomyza trifolii* Burgess]  
Berlin, Garten, Juni 1933

Fabaceae

**Lathyrus niger (L.) Bernh.**

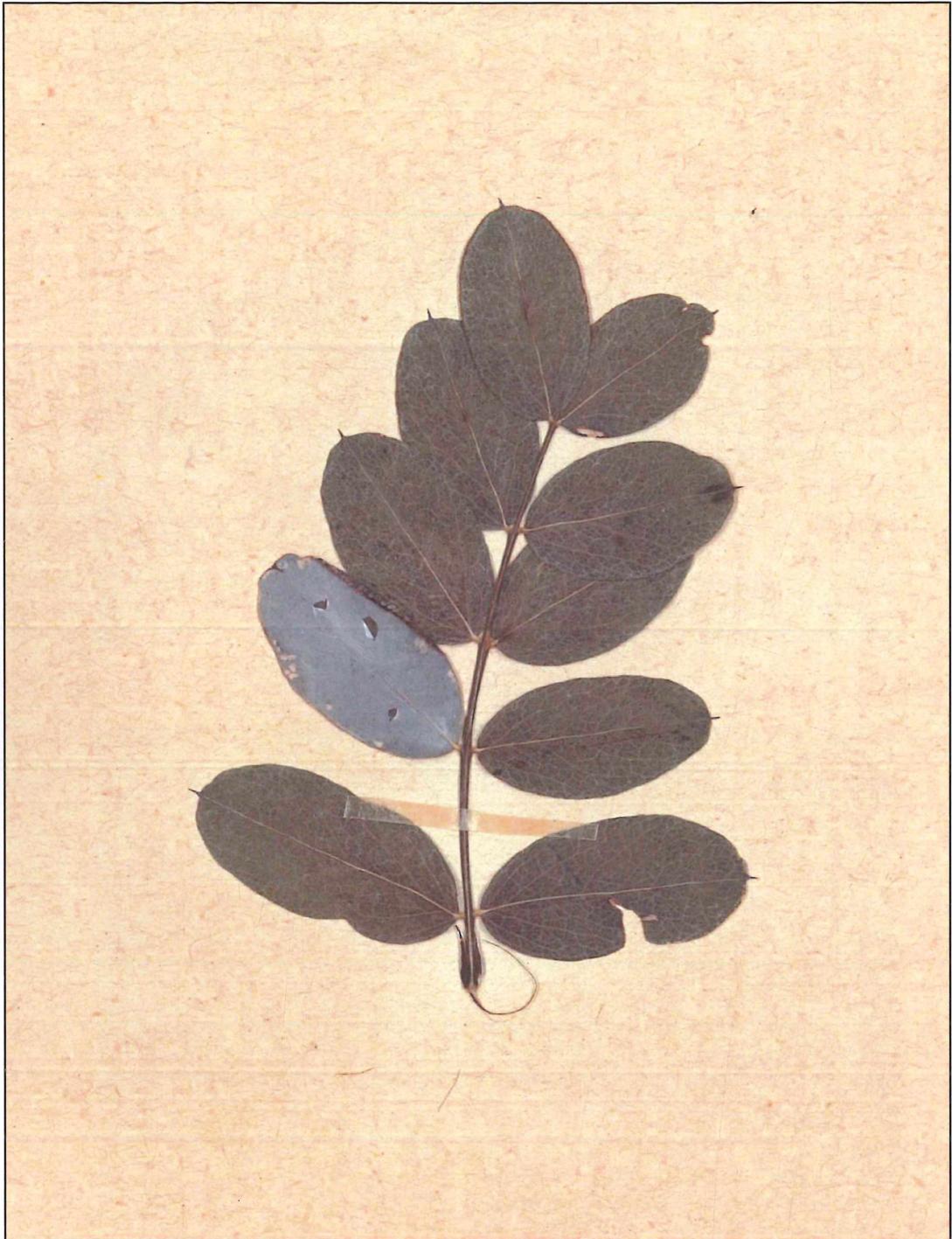
*Liriomyza congesta* (BECKER, 1903) (Diptera: Agromyzidae)



Details of previous page. Top: unbranched broad corridor with frass in its centre. Bottom: larva.



Fabaceae  
**Lathyrus niger (L.) Bernh.**  
*Sauterina hofmanniella* (SCHLEICH, 1867) (Lepidoptera: Gracillariidae)

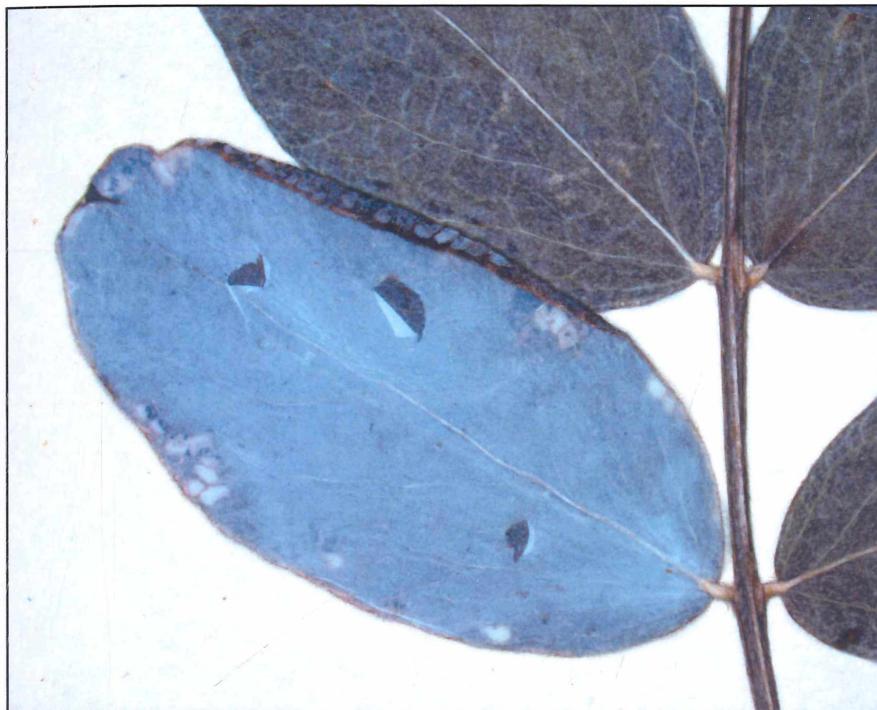


Leafminers-Herbarium, M.Hering, Lot 19, no. 377  
[Parectopa (Gracilaria) hofmanniella Schl. emended to Acrocercops hofmanniella Schl.]  
Naumburg/Saale, leg. Voigt Juli 1935

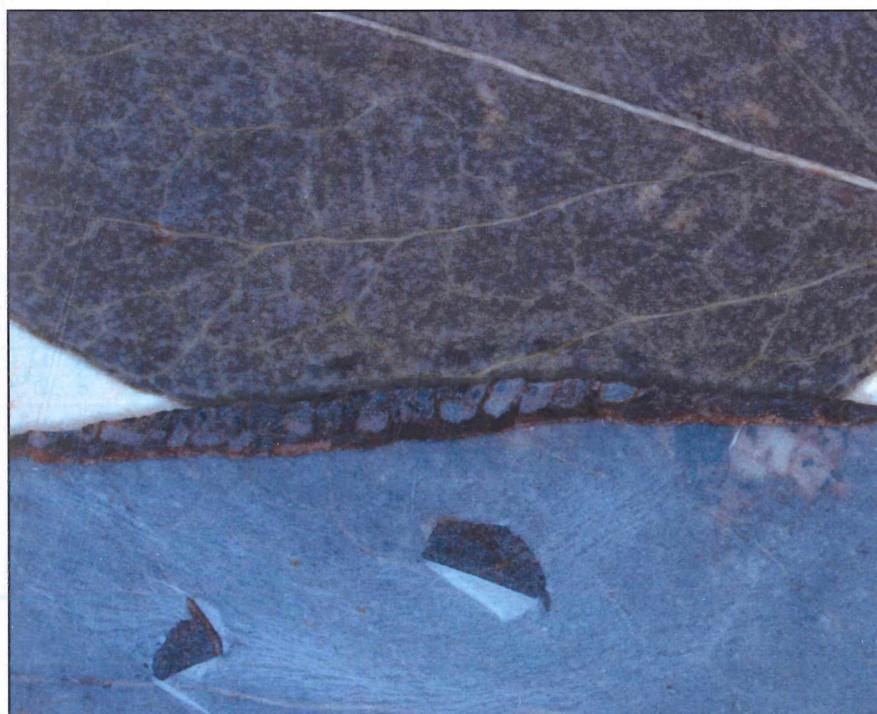
Fabaceae

**Lathyrus niger (L.) Bernh.**

*Sauterina hofmanniella* (SCHLEICH, 1867) (Lepidoptera: Gracillariidae)



Details of previous page. Top: tentiform mine. Bottom: detail; upper surface mottled because of removed tissue.



Fabaceae

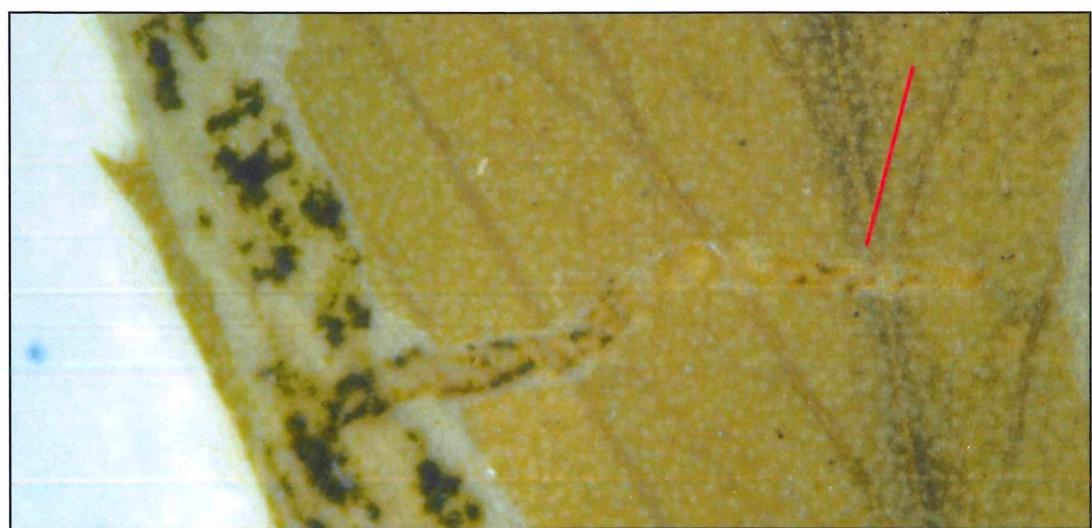
## Medicago sativa L.

*Liriomyza congesta* (BECKER, 1903) emended to *Liriomyza trifolii* (BURGESS in COMSTOCK, 1880) (Diptera: Agromyzidae)

About the mixture of the species *Liriomyza congesta/trifolii* read also:  
<http://www.bladmineerders.nl/minersf/dipteramin/liriomyza/trifolii/trifolii.htm>



Top: overview. Bottom: initial part of mine (red arrow).

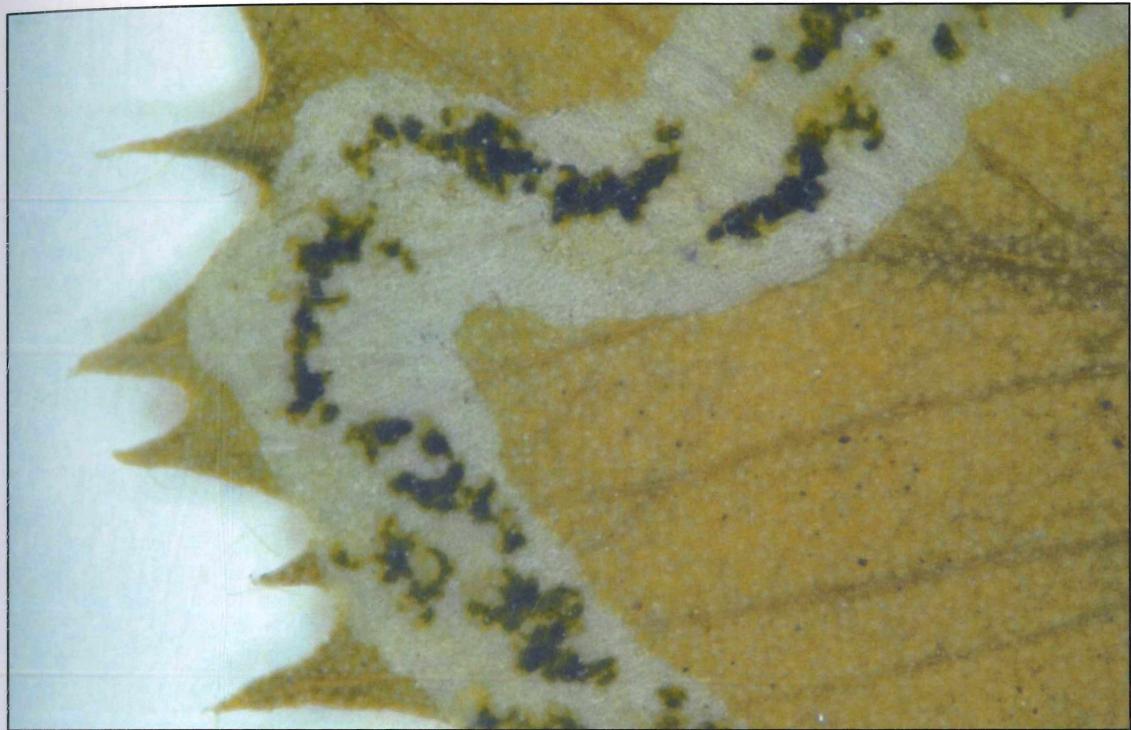


Leafminers-Herbarium, M.Hering, Lot 1, no. 8  
Crossen / Oder, IX.1929

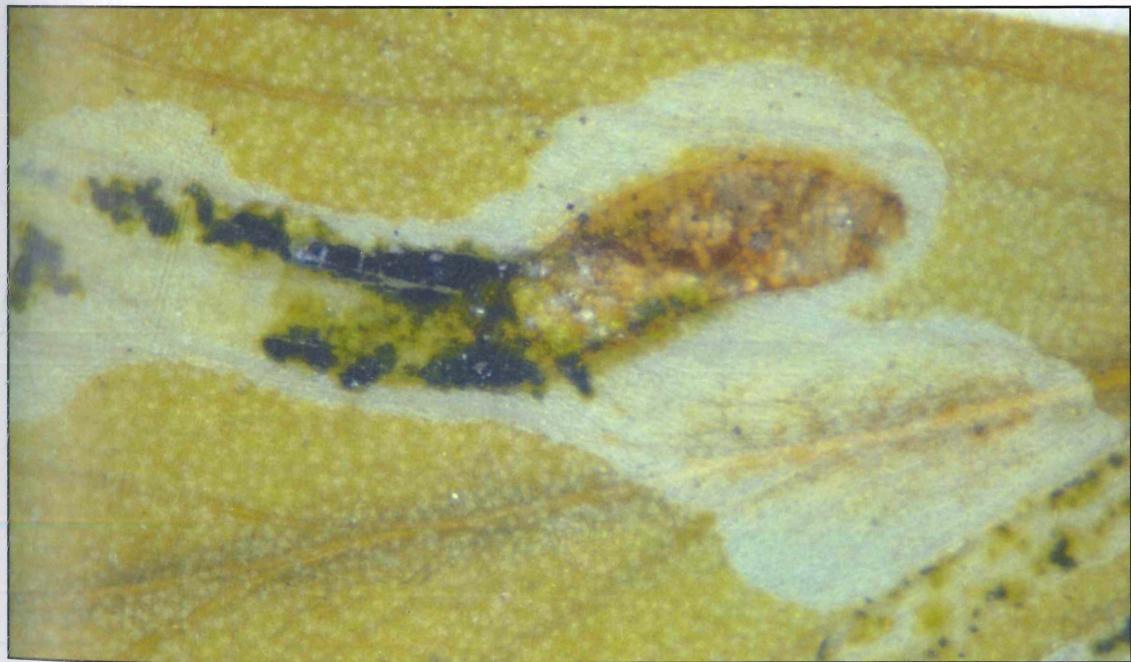
Fabaceae

## Medicago sativa L.

*Liriomyza congesta* (BECKER, 1903) emended to *Liriomyza trifolii* (BURGESS in COMSTOCK, 1880) (Diptera: Agromyzidae)



Details of previous page. Top: middle part of the corridor, frass as a broad, dispersed greenish band.  
Bottom: end part of the corridor.

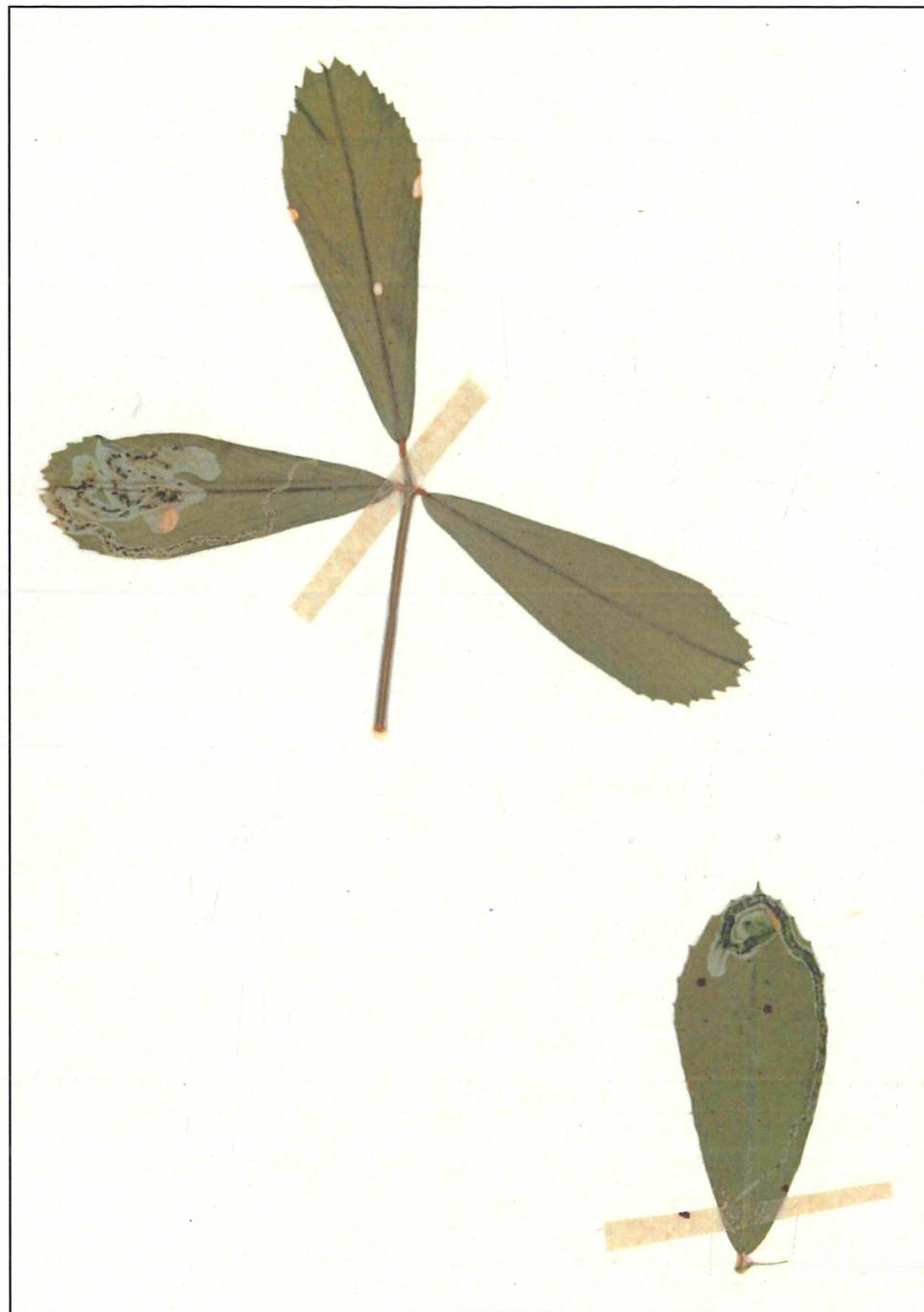


Fabaceae

# Medicago sativa L.

*Liriomyza congesta* (BECKER, 1903) emended to *Liriomyza trifolii* (BURGESS in COMSTOCK, 1880) (Diptera: Agromyzidae)

About the mixture of the species *Liriomyza congesta/trifolii* read also:  
<http://www.bladmineerders.nl/minersf/dipteramin/liriomyza/trifolii/trifolii.htm>



Leafminers-Herbarium, M.Hering, Lot 1a, no. 8  
Crossen / Oder, IX.1929

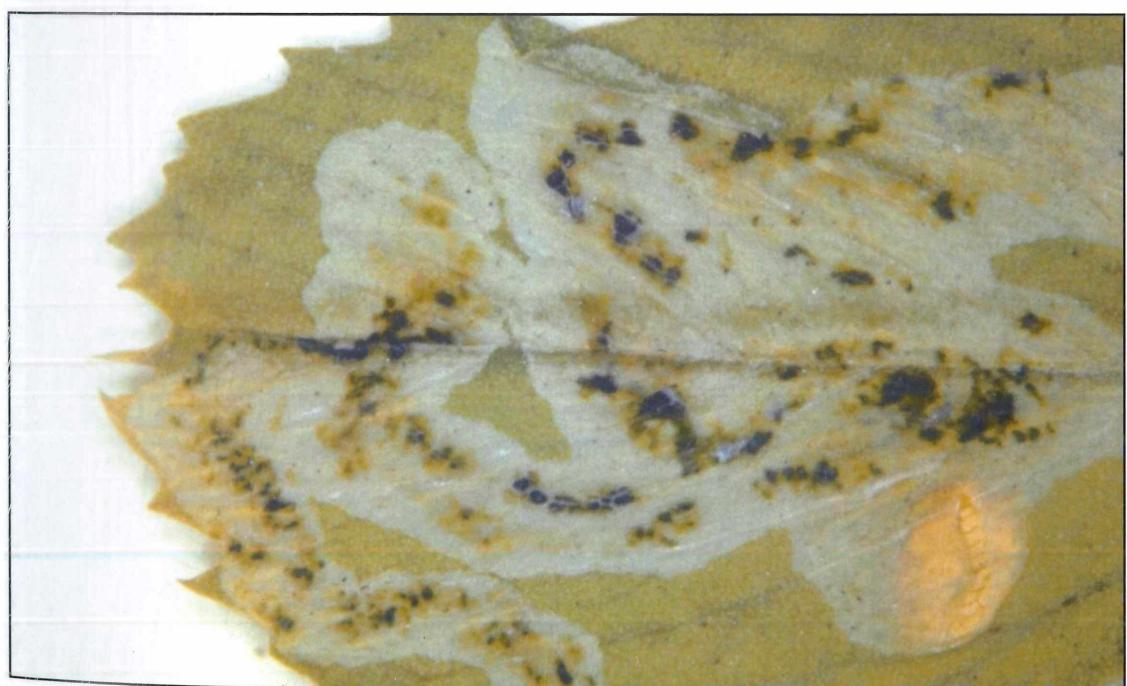
Fabaceae

## Medicago sativa L.

*Liriomyza congesta* (BECKER, 1903) emended to *Liriomyza trifolii* (BURGESS in COMSTOCK, 1880) (Diptera: Agromyzidae)



Details of previous page, leaf at centre. Top: initial part of the corridor. Bottom: later stage of the corridor, corridor whitish, frass in a greenish band with black granules.



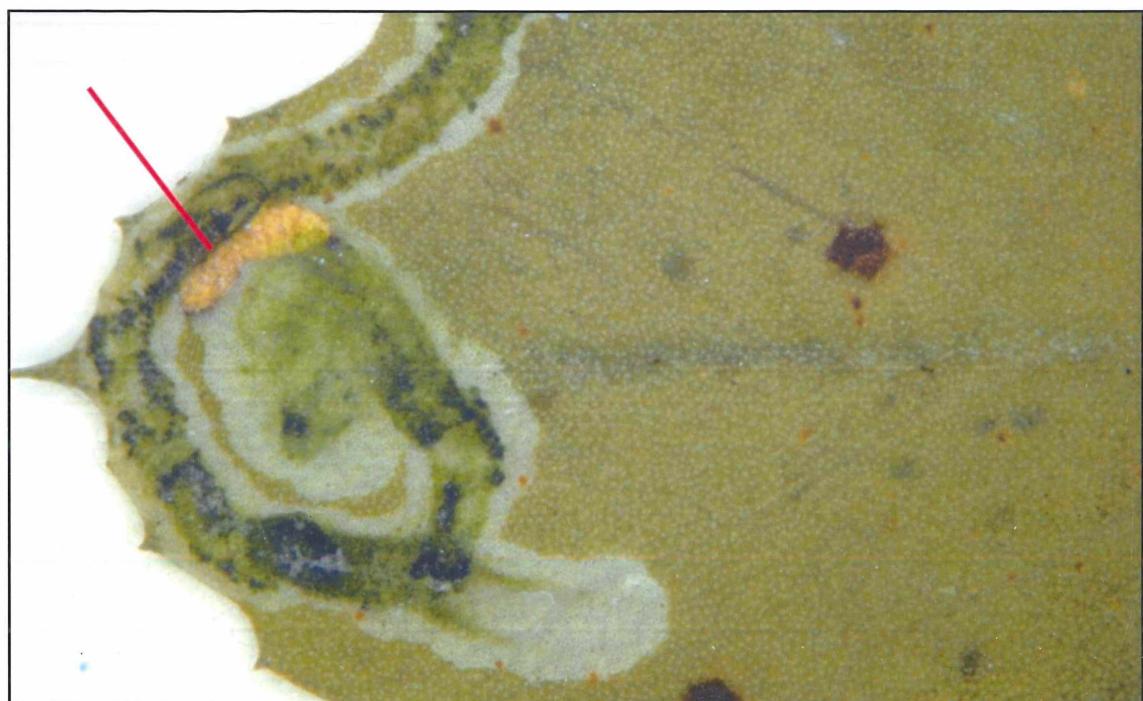
Fabaceae

## Medicago sativa L.

*Liriomyza congesta* (BECKER, 1903) emended to *Liriomyza trifolii* (BURGESS in COMSTOCK, 1880) (Diptera: Agromyzidae)



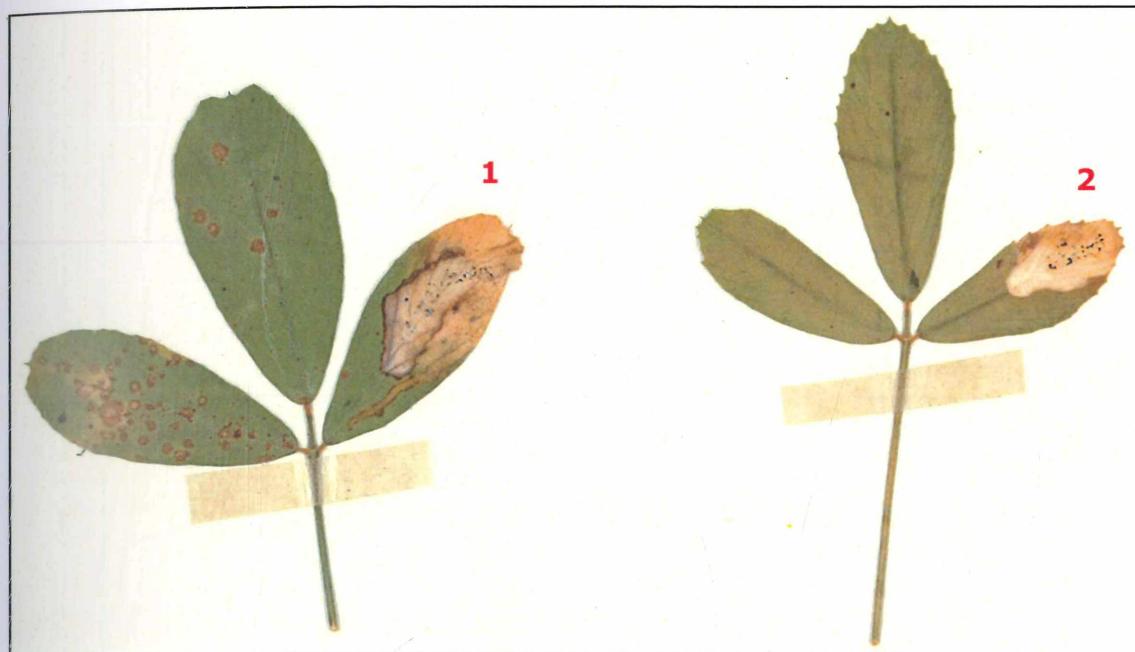
Details of page next to last. Top: end part of corridor with exit slit, pupation outside of the mine. Bottom: leaf at bottom; corridor with larva (red arrow).



Fabaceae

# Medicago sativa L.

*Agromyza frontella* (RONDANI, 1875) (Diptera: Agromyzidae)



Top: overview. Bottom left: mine on leaf no. 1. Bottom right: mine on leaf no. 2: frass visible as grains, sometimes as clusters.

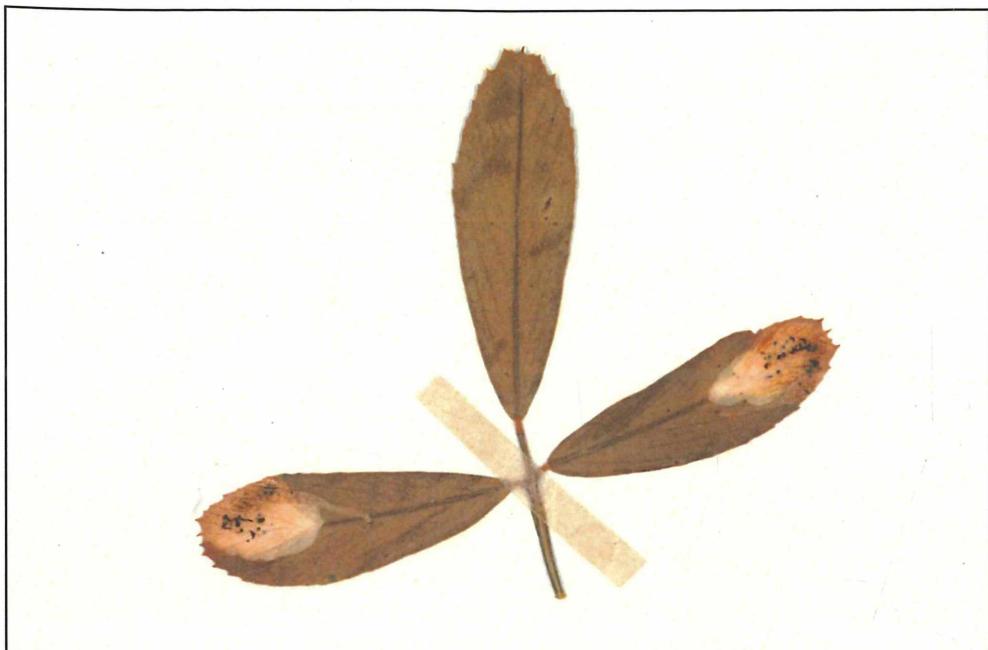


Leafminers-Herbarium, M.Hering, Lot 1, no. 9  
Crossen / Oder, IX.1929

Fabaceae

# Medicago sativa L.

*Agromyza frontella* (RONDANI, 1875) (Diptera: Agromyzidae)



Top: overview. Bottom left: left leaf. Bottom right: right leaf: frass visible as grains, sometimes clustered.



Leafminers-Herbarium, M.Hering, Lot 1a, no. 9  
Crossen / Oder, IX.1929

Fabaceae

**Medicago sativa L.**

*Agromyza nana* MEIGEN, 1830 (Diptera: Agromyzidae)



Leafminers-Herbarium, M.Hering, Lot 17, no. 337  
Pto. Sta. Maria, Spanien, April 1933

Fabaceae

**Medicago sativa L.**

*Agromyza nana* MEIGEN, 1830 (Diptera: Agromyzidae)



Details of previous page: upper-surface blotch mine in centre of leaflet; frass in few large lumps.



Fabaceae

**Ononis repens L.**

*Liriomyza cicerina* (RONDANI, 1875) (Diptera: Agromyzidae)



Leafminers-Herbarium, M.Hering, Lot 6, no. 117  
Wollin, IX. 1930

Fabaceae

**Ononis repens L.**

*Liriomyza cicerina* (RONDANI, 1875) (Diptera: Agromyzidae)



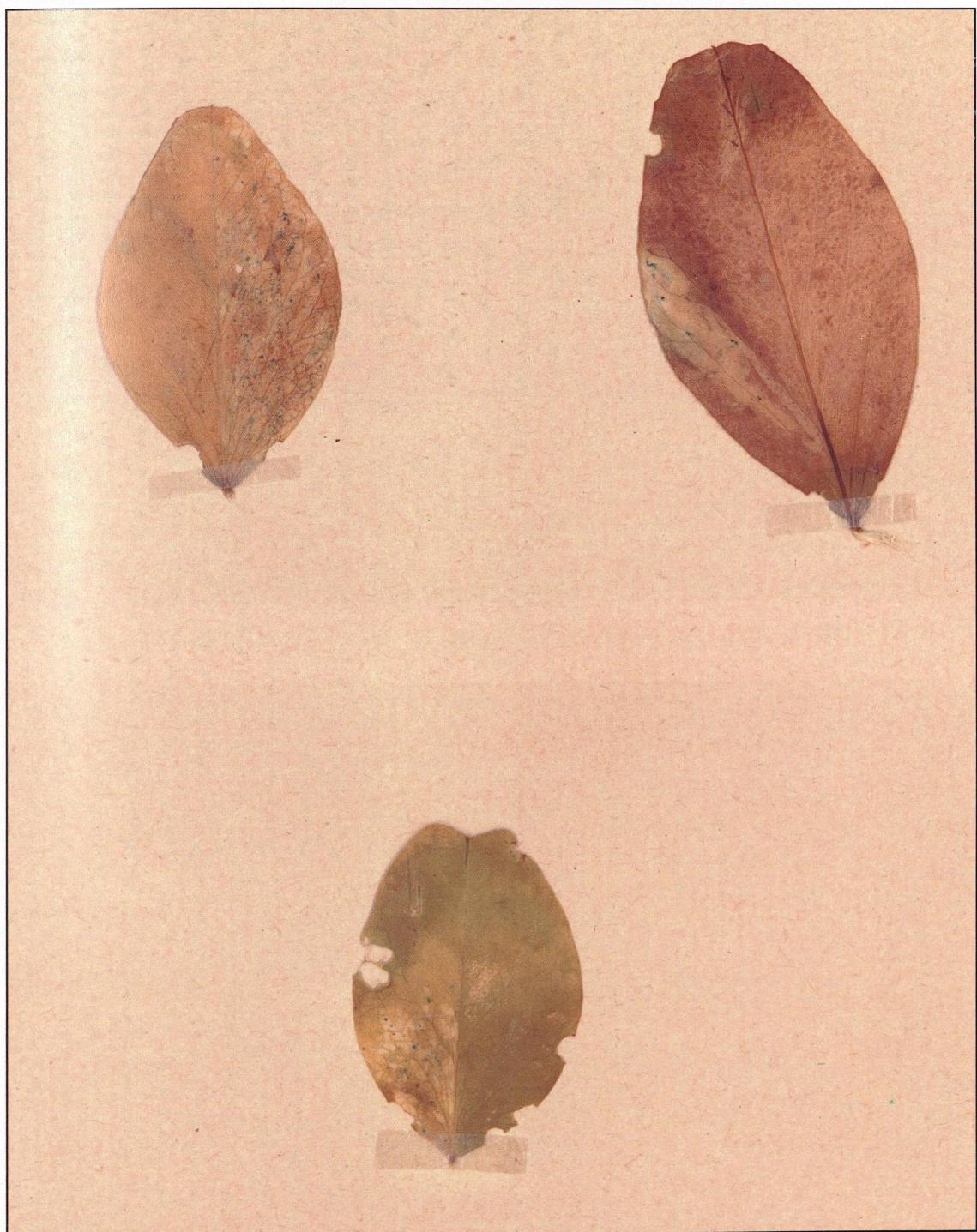
Details of previous page: details of blotch mine occupying nearly an entire leaflet, frass in threads and grains.



Fabaceae

**Pisum sativum L.**

*Agromyza lathyri* HENDEL, 1923 (Diptera: Agromyzidae)

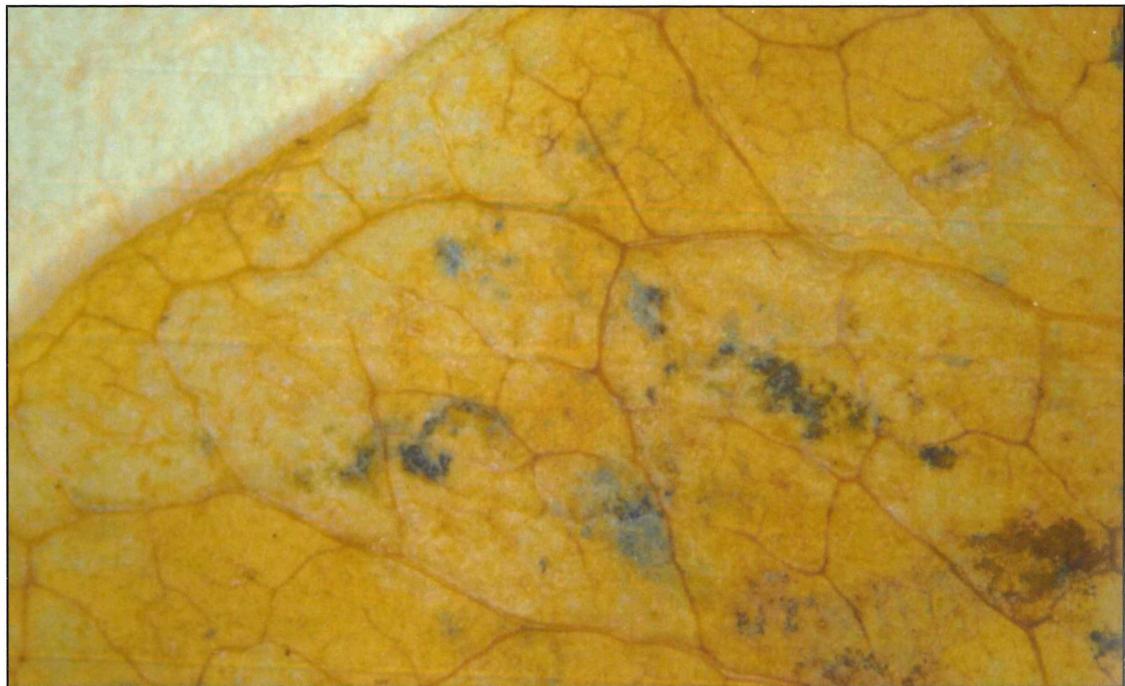


Leafminers-Herbarium, M.Hering, Lot 5, no. 92  
Berlin, VII. 1930

Fabaceae

**Pisum sativum L.**

*Agromyza lathyri* HENDEL, 1923 (Diptera: Agromyzidae)



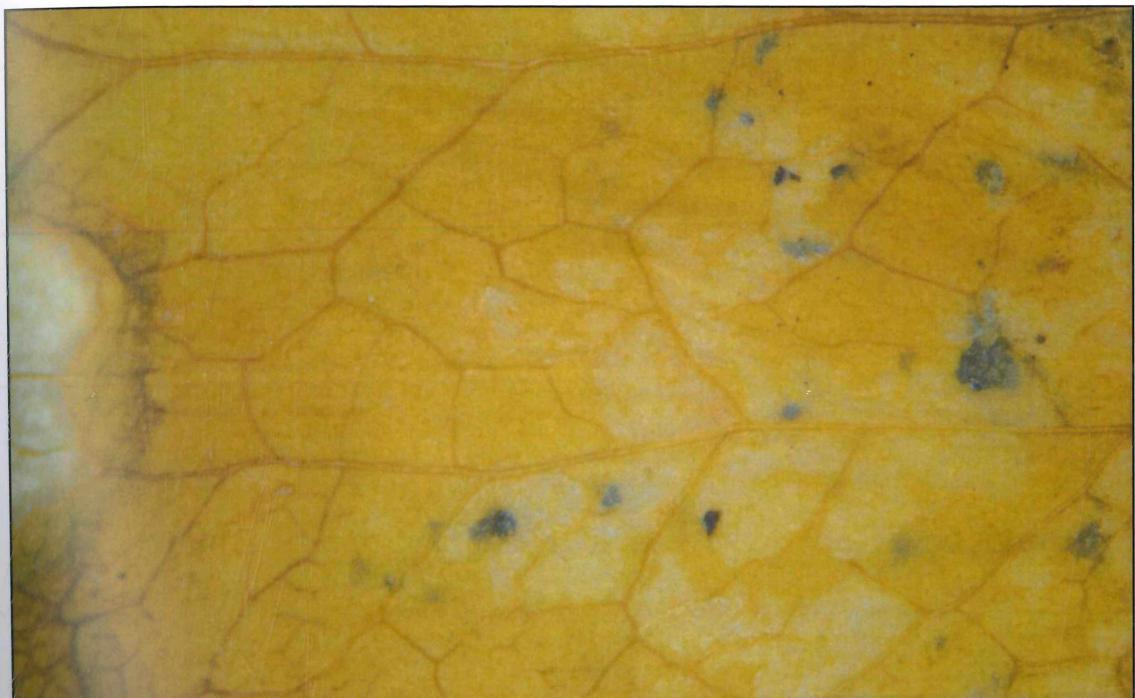
Details of previous page. Top: leaf top left. Bottom: leaf top right - details of blotch, frass in coarse grains.



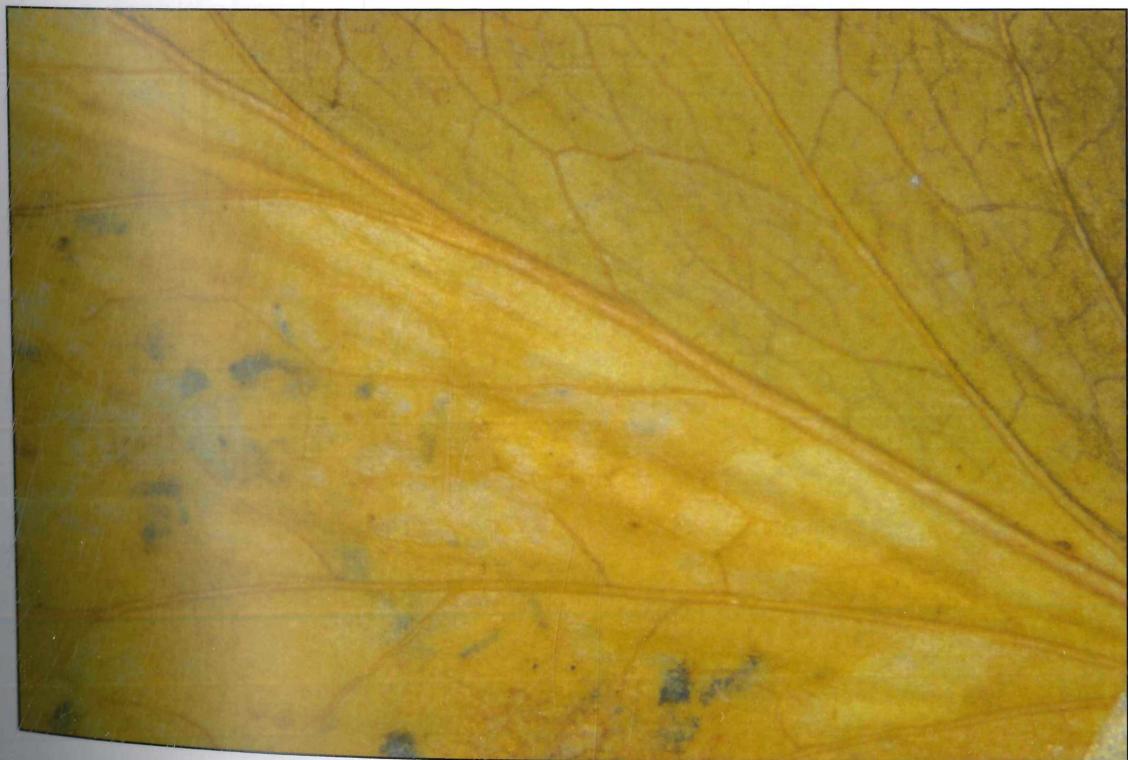
Fabaceae

**Pisum sativum L.**

*Agromyza lathyri* HENDEL, 1923 (Diptera: Agromyzidae)



Details of page next to last, leaf at the bottom: details of blotch, frass in coarse grains.



Fabaceae

# Scorpiurus muricatus L.

*Apterona helicoidella* (VALLOT, 1827) emended to *Apterona crenulella* (BRUAND, 1853) (Lepidoptera: Psychidae)

About the position of the species *Apterona helicoidella/crenulella* read also:

<http://www.bladmineerders.nl/minersf/lepidopteramin/apterona/helicoidella/helicoidella.htm>

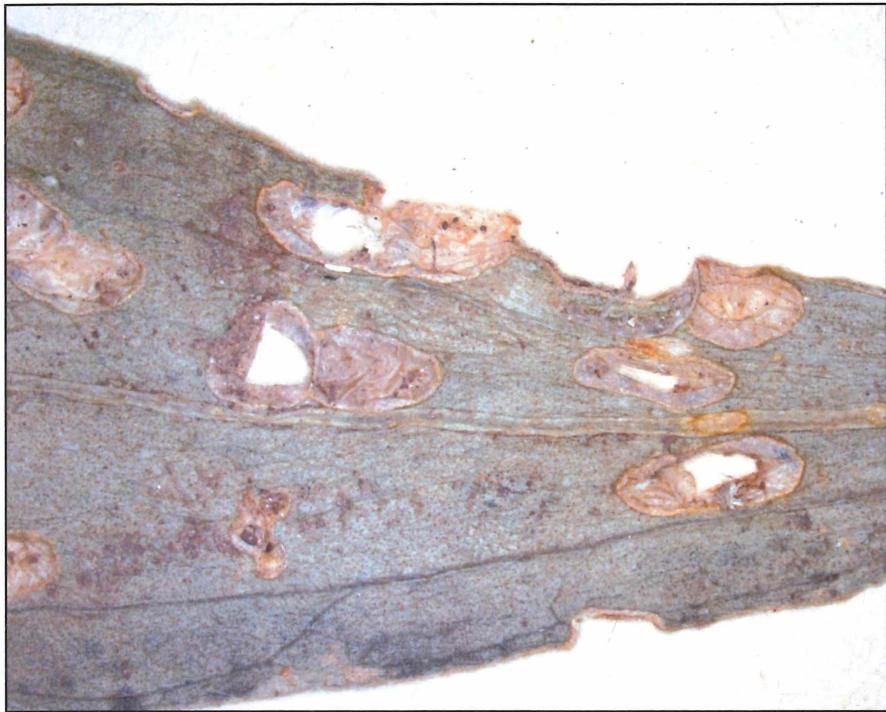


Leafminers-Herbarium, M.Hering, Lot 14, no. 275  
[*Scorpiurus subvillosum* L.] [*Apterona crenulella* Bruand.]  
Chiclana bei Cadiz April 1933

Fabaceae

# Scorpiurus muricatus L.

*Apterona helicoidella* (VALLOT, 1827) emended to *Apterona crenulella* (BRUAND, 1853) (Lepidoptera: Psychidae)



Details of previous page: typical fleck mines.



Fabaceae

# Scorpiurus muricatus L.

*Apterona helicoidella* (VALLOT, 1827) emended to *Apterona crenulella* (BRUAND, 1853) (Lepidoptera: Psychidae)



Details of page next to last. Top: fleck mines. Bottom: case formed like a snail shell.



Fabaceae

**Vicia cracca L.**

*Agromyza bicophaga* HERING, 1925 (Diptera: Agromyzidae)



Leafminers-Herbarium, M.Hering, Lot 7, no. 134  
Berlin-Finkenkrug, VI. 1931

Fabaceae  
**Vicia cracca L.**  
*Agromyza bicophaga* HERING, 1925 (Diptera: Agromyzidae)



Details of previous page (leaflet on right stem). Top: detail of blotch. Bottom: blotch-mine and dried puparium outside the mine.



Fabaceae

**Vicia cracca L.**

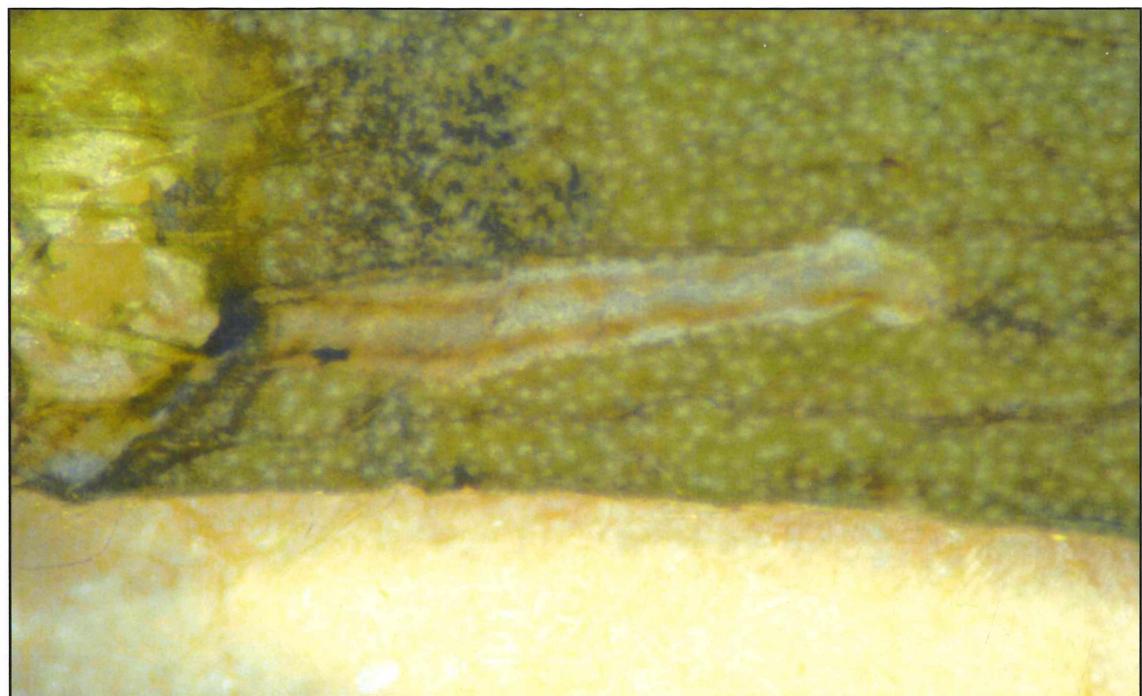
*Agromyza bicophaga* HERING, 1925 (Diptera: Agromyzidae)



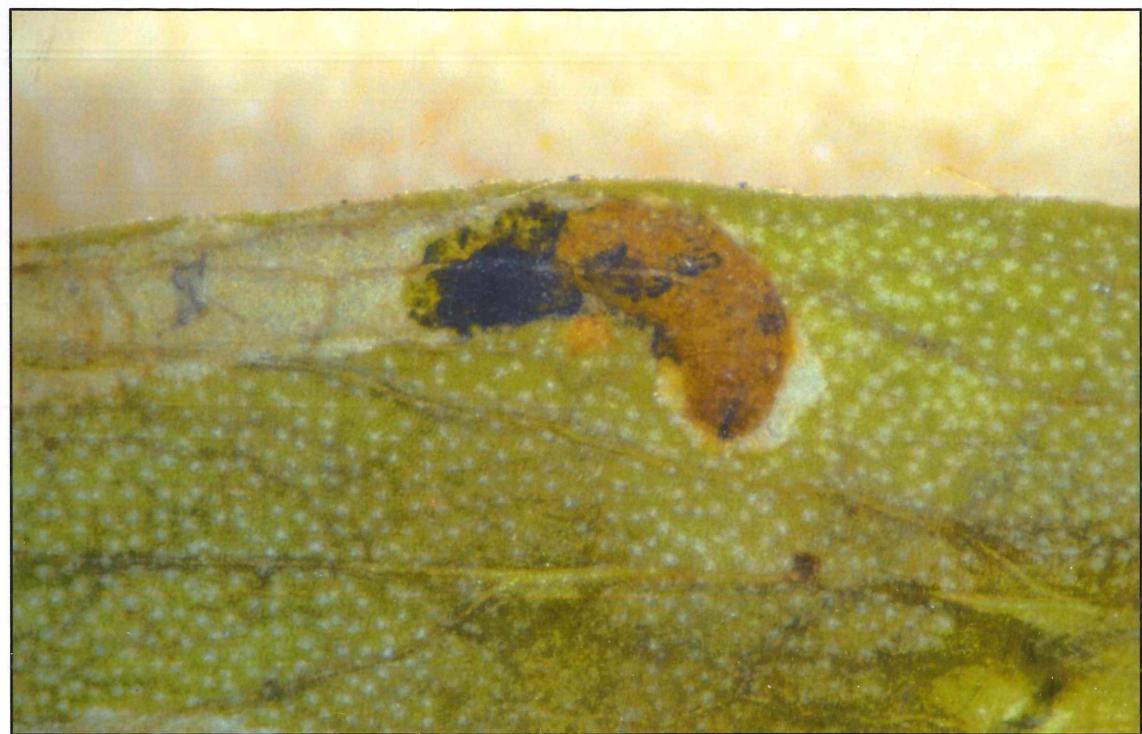
Details of page next to last. Top: detail of puparium (right leaflet). Bottom: leaflet on the left stem, corridor overview with dried larva (dark patch at the upper leaf margin), frass is visible as fine streaks along the corridor margins.



Fabaceae  
**Vicia cracca L.**  
*Agromyza bicophaga* HERING, 1925 (Diptera: Agromyzidae)



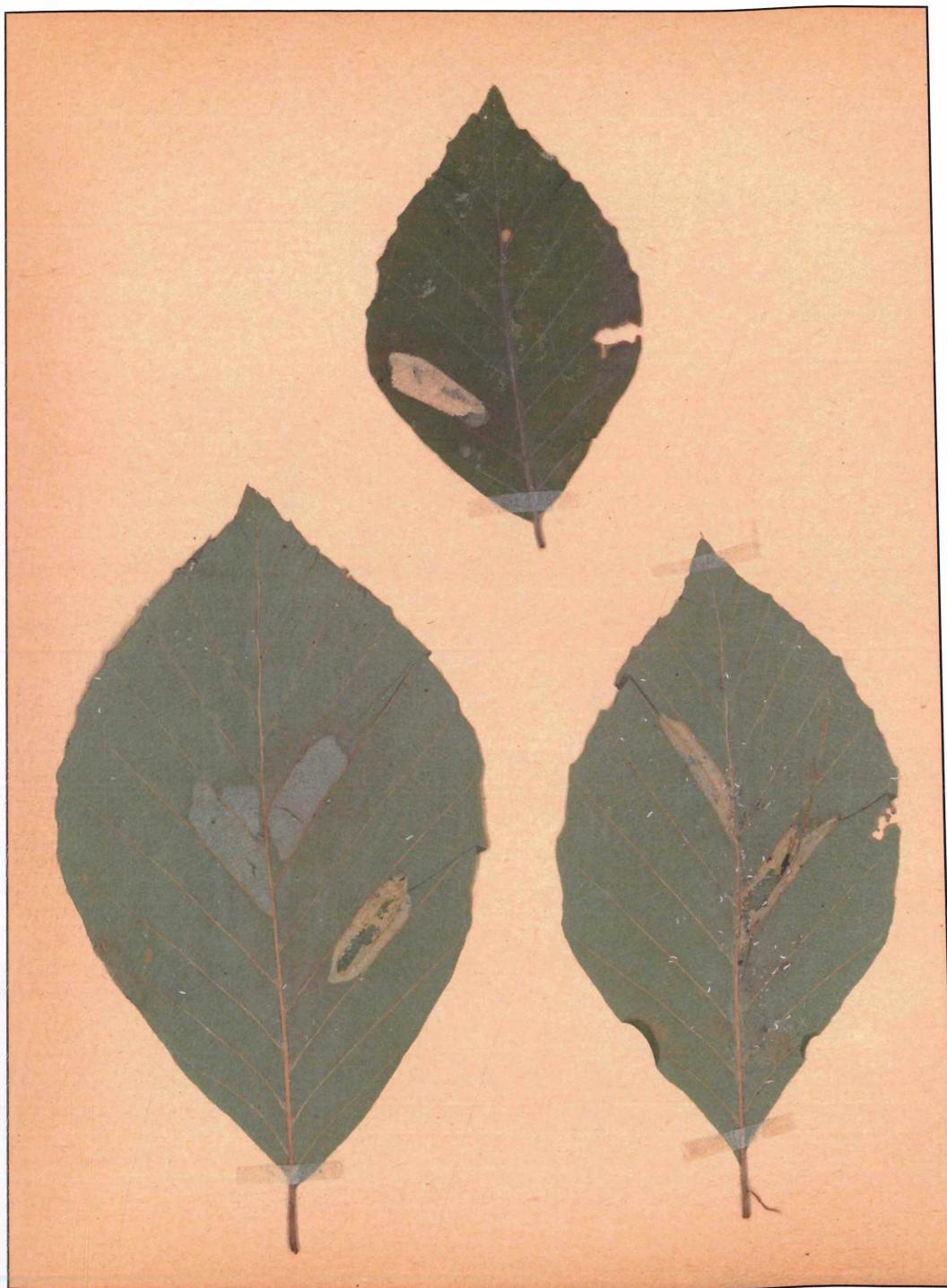
Details of page 53 (leaflet on the left side). Top: details of corridor with frass as streaks at the sides of the corridor. Bottom: detail of corridor with silhouette of dried larva (detail of previous page).



Fagaceae

**Fagus sylvatica L.**

*Phyllonorycter maestingella* (MÜLLER, 1764) (Lepidoptera: Gracillariidae)



Leafminers-Herbarium, M.Hering, Lot 6, no. 107  
[*Lithoclellis faginella* Z.] [*Fagus sylvatica* L.] Berlin-Finkenkrug, VII. 1930

Fagaceae

***Fagus sylvatica L.***

*Phyllonorycter maestingella* (MÜLLER, 1764) (Lepidoptera: Gracillariidae)



Details of previous page. Top: leaf on the top of the sheet, upper-surface aspect, detail of elongate blotch.  
Bottom: lower-surface aspect; mine opened, frass heap visible.



Fagaceae

***Fagus sylvatica L.***

*Phyllonorycter maestingella* (MÜLLER, 1764) (Lepidoptera: Gracillariidae)



Details of page next to last. Top: lower-surface aspect of elongate blotch. Bottom: folds from blotch to leaf margin, lower-surface aspect.



Fagaceae  
***Fagus sylvatica* L.**  
*Orchestes fagi* (LINNAEUS, 1758) (Coleoptera: Curculionidae)

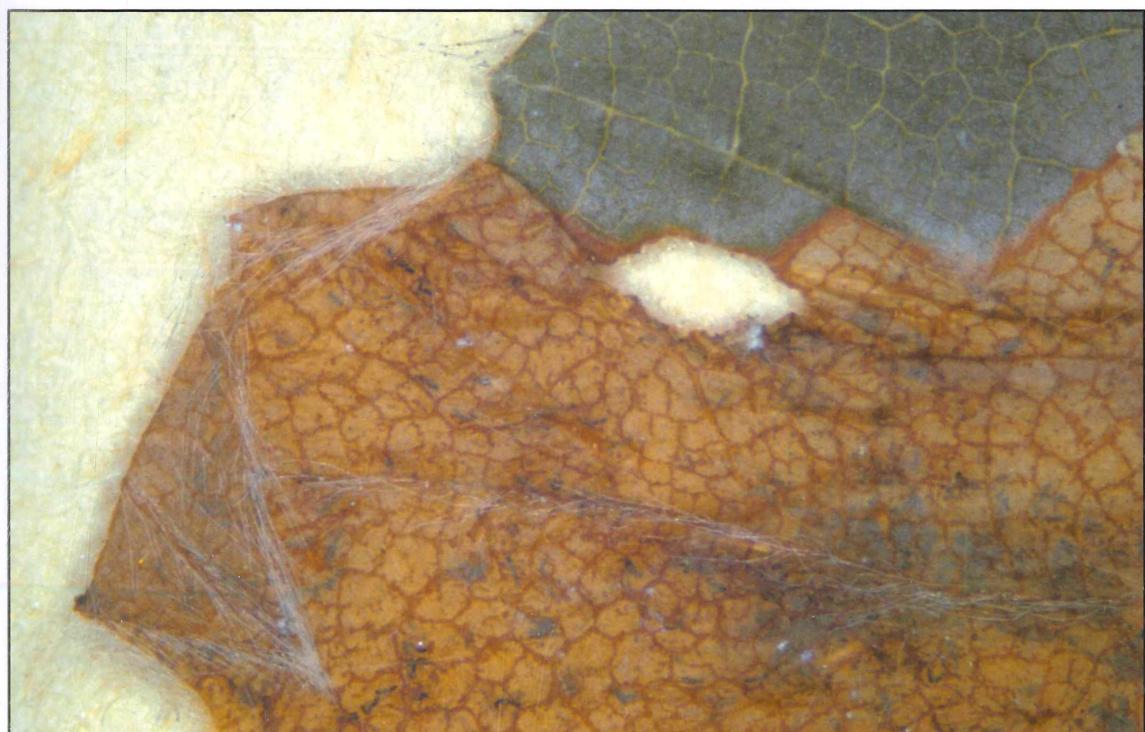


Leafminers-Herbarium, M.Hering, Lot 10, no. 197  
[*Rhynchaenus fagi* Linné] [*Fagus silvatica* L.] Oderberg, Brandenburg X. 1932

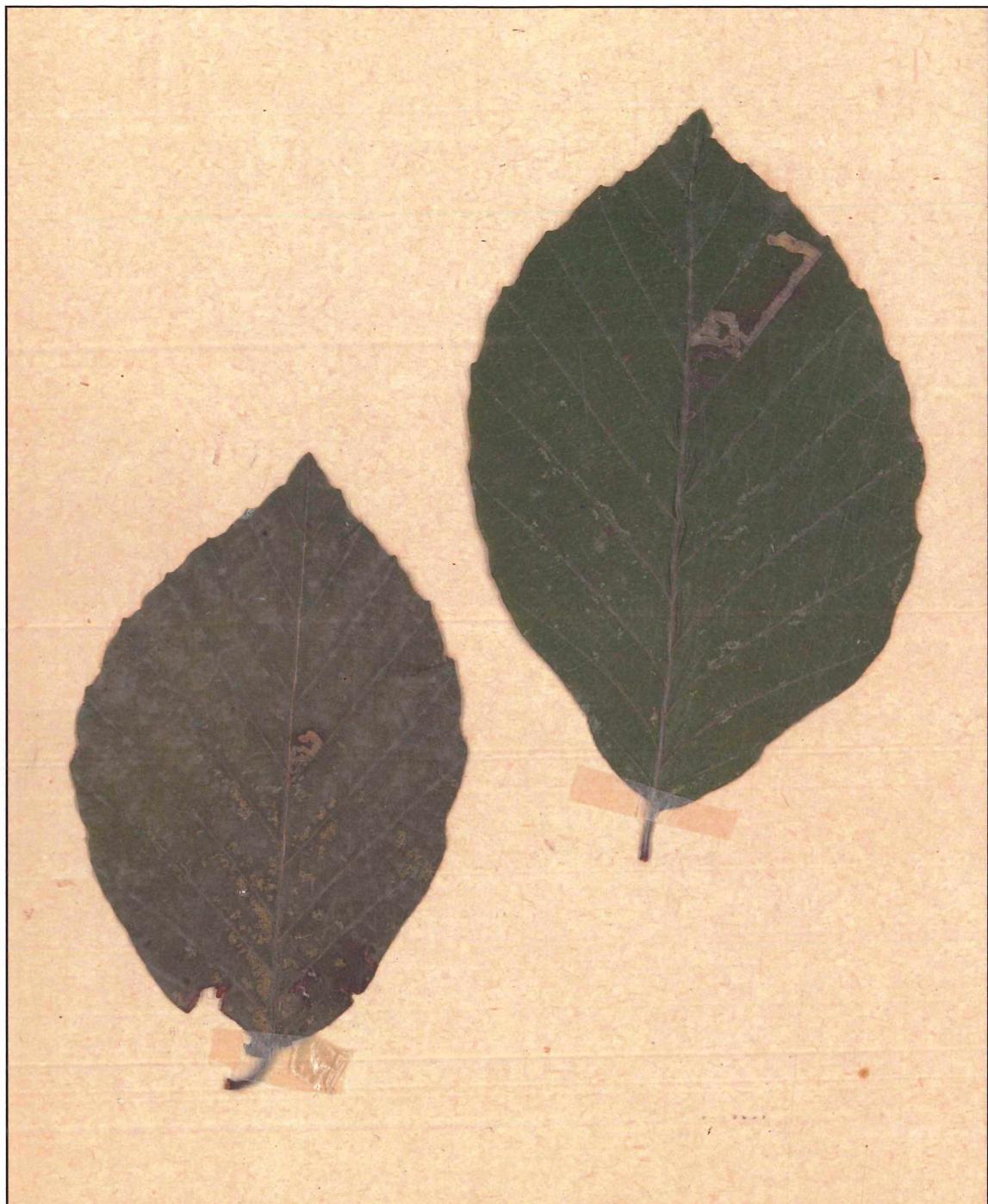
Fagaceae  
**Fagus sylvatica L.**  
*Orchestes fagi* (LINNAEUS, 1758) (Coleoptera: Curculionidae)



Details of previous page. Top: initial part of the corridor starting at the midrib, frass in long threads.  
Bottom: broad blotch occupying almost the entire leaf tip.



Fagaceae  
***Fagus sylvatica* L.**  
*Stigmella tityrella* (STAINTON, 1854) (Lepidoptera: Nepticulidae)

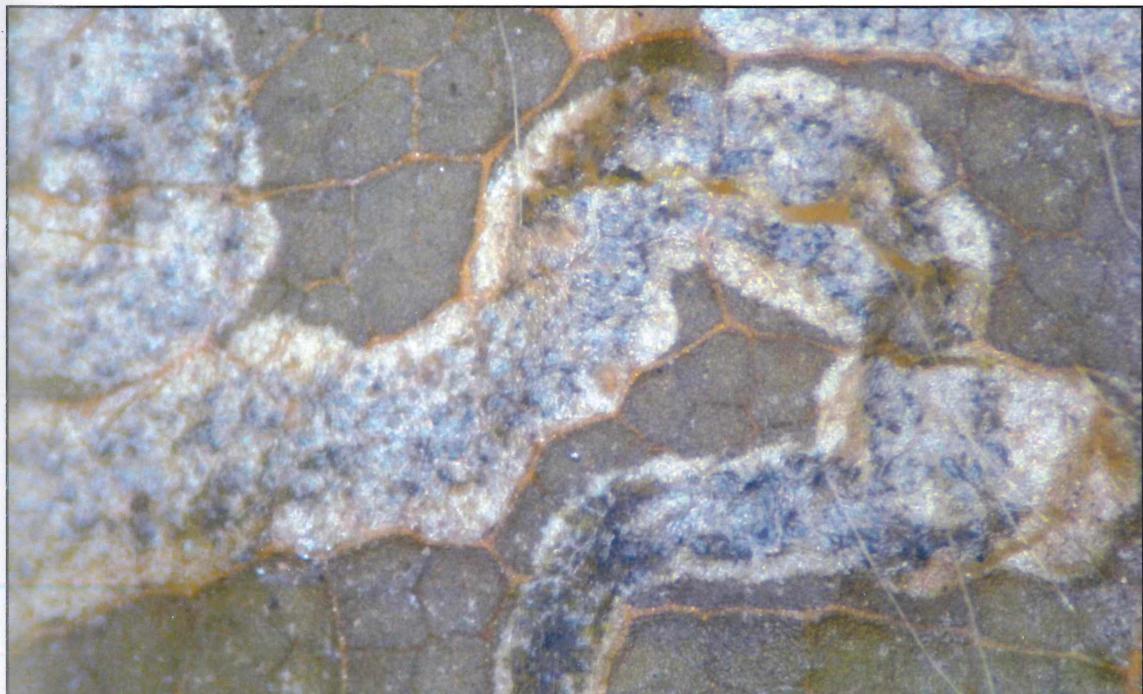


Leafminers-Herbarium, M.Hering, Lot 10, no. 198  
[Nepticula hemargyrella Hein. emended to *tityrella* Stt.] [*Fagus sylvatica* L.]  
Berlin-Spandau, Brandenburg X. 1932

Fagaceae  
***Fagus sylvatica* L.**  
*Stigmella tityrella* (STAINTON, 1854) (Lepidoptera: Nepticulidae)



Details of previous page. Top: early corridor, zig-zag line between two veins. Bottom: later corridor, frass dispersed, not coiled which is typical for *S. tityrella*.



Fagaceae

***Fagus sylvatica L.***

*Stigmella hemargyrella* (KOLLAR, 1832) (Lepidoptera: Nepticulidae)



Leafminers-Herbarium, M.Hering, Lot 10, no. 199  
[Nepticula basalella Frey emended to hemargyrella Kollar] [Fagus sylvatica L.]  
Berlin-Spandau, Brandenburg X. 1932

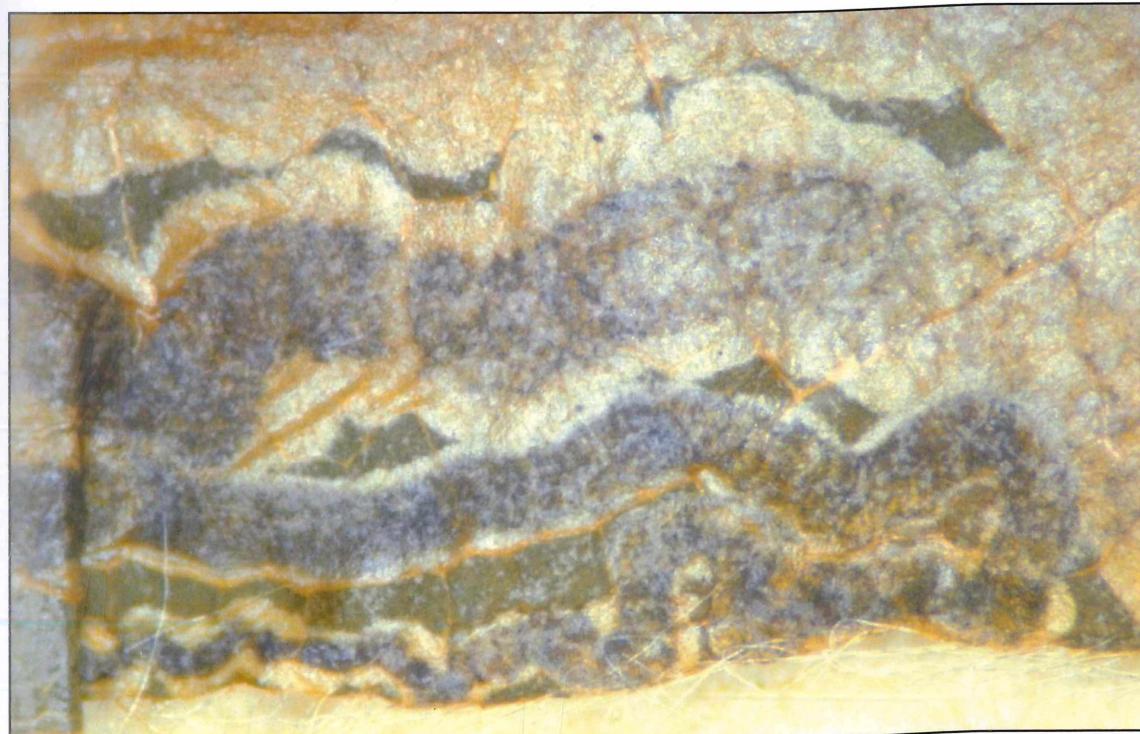
Fagaceae

**Fagus sylvatica L.**

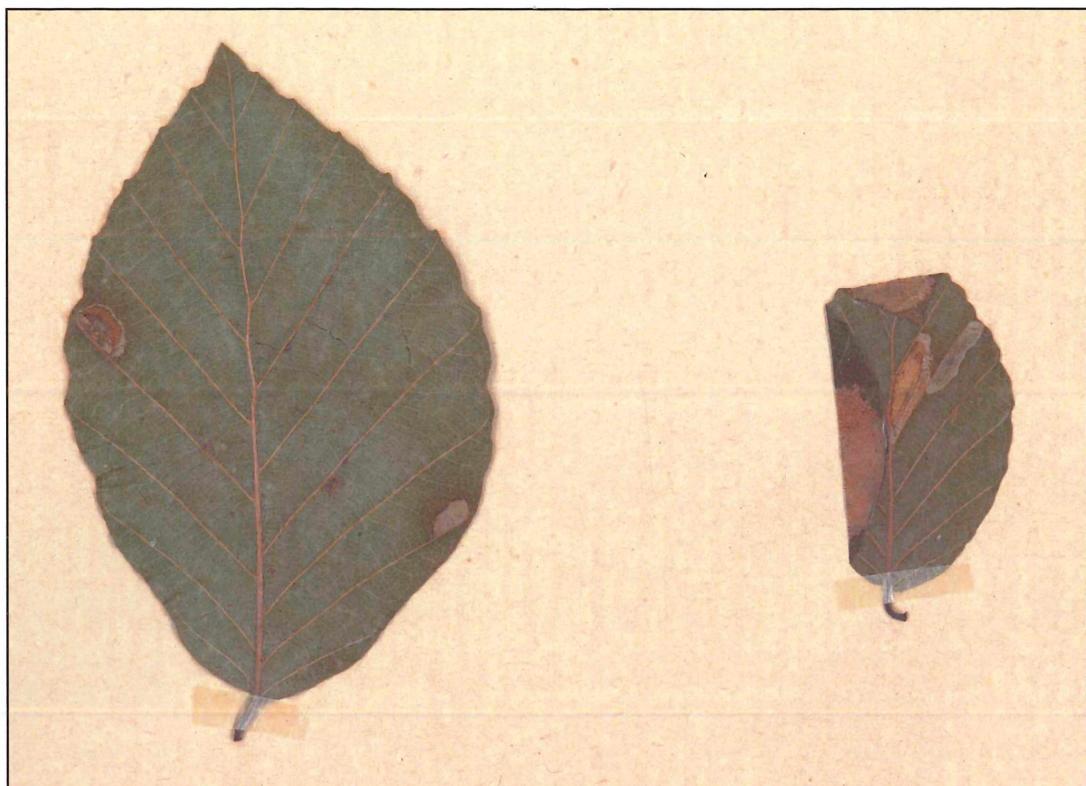
*Stigmella hemargyrella* (KOLLAR, 1832) (Lepidoptera: Nepticulidae)



Details of previous page. Top: end part of corridor. Bottom: winding corridor with coiled frass.



Fagaceae  
***Fagus sylvatica* L.**  
*Parornix fagivora* (FREY, 1861) (Lepidoptera: Gracillariidae)



Top: overview. Bottom: detail of left leaf.



Leafminers-Herbarium, M.Hering, Lot 21, no. 401  
[*Fagus sylvatica* L.]  
Berlin-Finkenkrug, August 1936

Fagaceae  
***Fagus sylvatica* L.**  
*Parornix fagivora* (FREY, 1861) (Lepidoptera: Gracillariidae)



Top: detail of left leaf, black frass in blotch mine. Bottom: detail of right leaf. Folded leaf tip, under which the larva lives free after having left the mine.



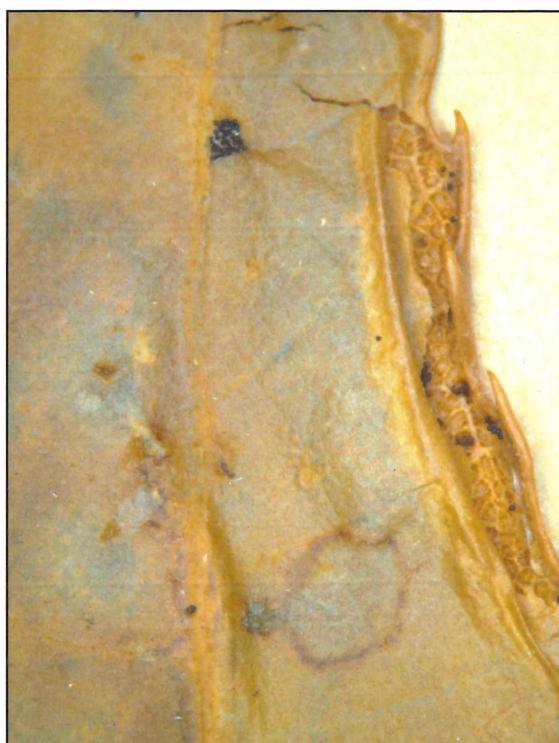
Fagaceae

**Quercus coccifera L.**

*Phyllonorycter quercus* (AMSEL & HERING, 1931) (Lepidoptera: Gracillariidae)



Top: overview. Bottom: different aspects of blotch occupying the major part of the leaf.



Leafminers-Herbarium, M.Hering, Lot 7, no. 129  
[Lithocolletis quercus Ams.] Jerusalem, Palaestina [Israel], März 1930

Fagaceae  
**Quercus ilex L.**

*Phyllonorycter messaniella* (ZELLER, 1846) (Lepidoptera: Gracillariidae)



Leafminers-Herbarium, M.Hering, Lot 14, no. 265  
[*Lithocletis messaniella* Z.]  
Albarracin, Aragonien, Juni 1933

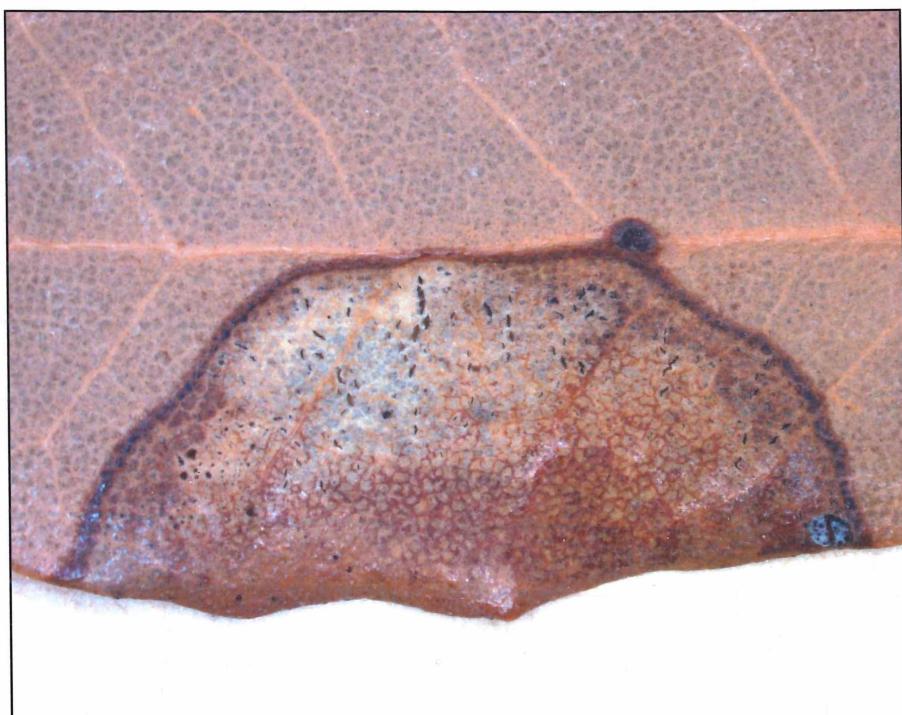
Fagaceae

**Quercus ilex L.**

*Phyllonorycter messaniella* (ZELLER, 1846) (Lepidoptera: Gracillariidae)



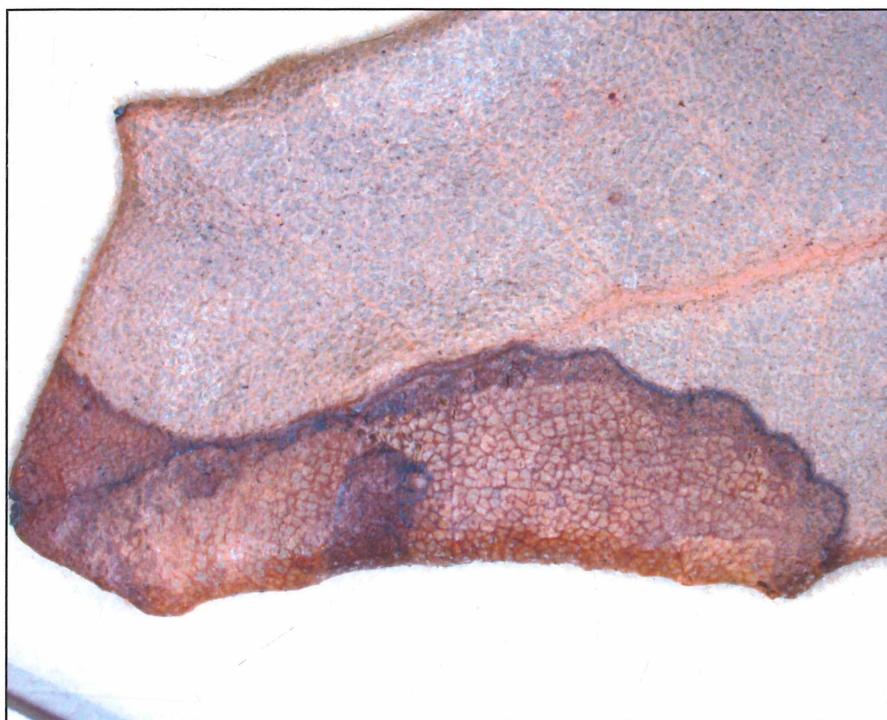
Details of previous page: bottom leaf. Top: leaf underside. Small oval mine with one sharp fold. Bottom: same mine, upper side of the leaf.



Fagaceae

**Quercus ilex L.**

*Phyllonorycter messaniella* (ZELLER, 1846) (Lepidoptera: Gracillariidae)



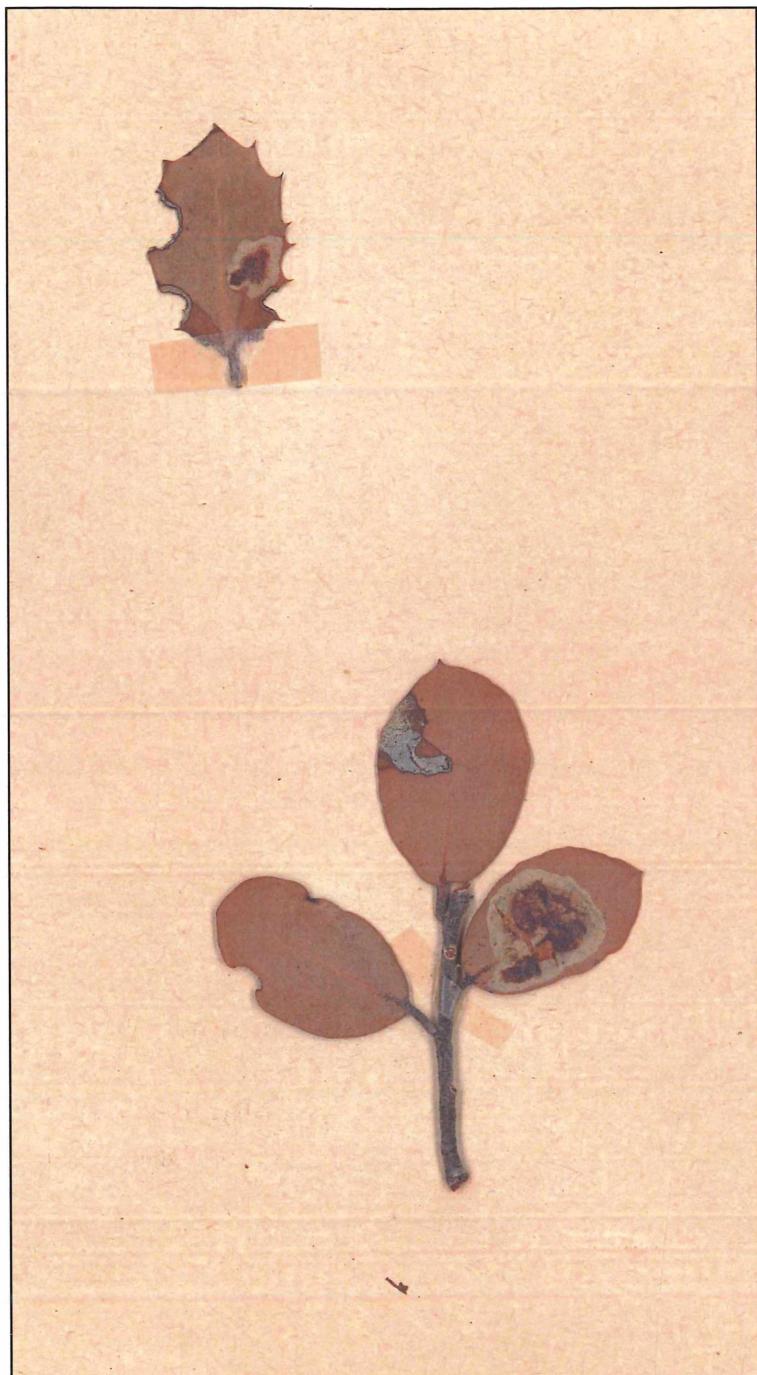
Details of page next to last: left top leaf. Top: upper side of the leaf. Bottom: underside with leaf folded downwards due to mine.



Fagaceae

**Quercus ilex L.**

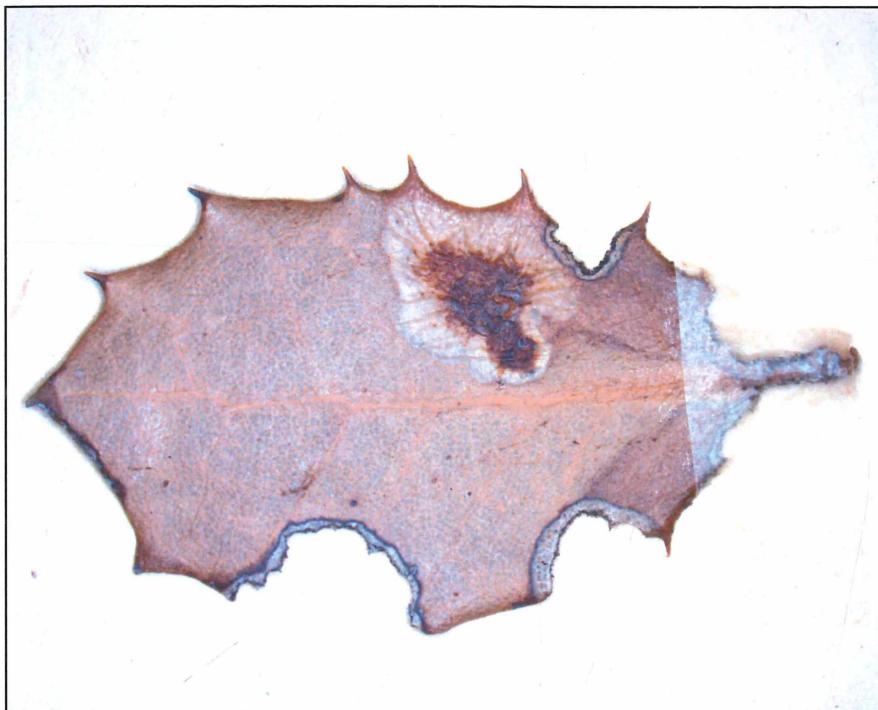
*Phyllonorycter belotella* (STAUDINGER, 1859) (Lepidoptera: Gracillariidae)



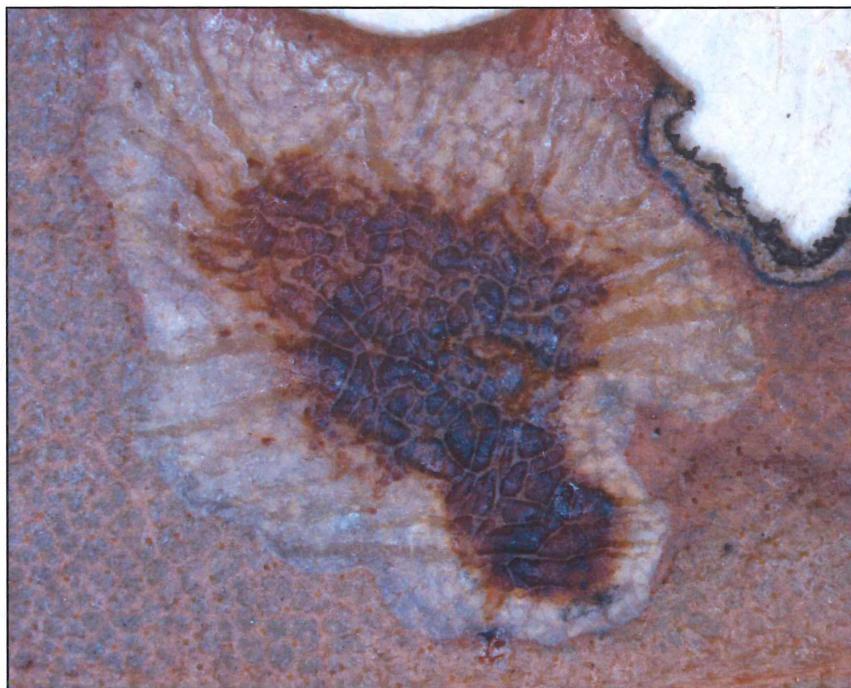
Leafminers-Herbarium, M.Hering, Lot 14, no. 266  
[*Lithocolletis joviella* Cst.]  
Albarracin, Aragonien, Juni 1933

Fagaceae  
**Quercus ilex L.**

*Phyllonorycter belotella* (STAUDINGER, 1859) (Lepidoptera: Gracillariidae)



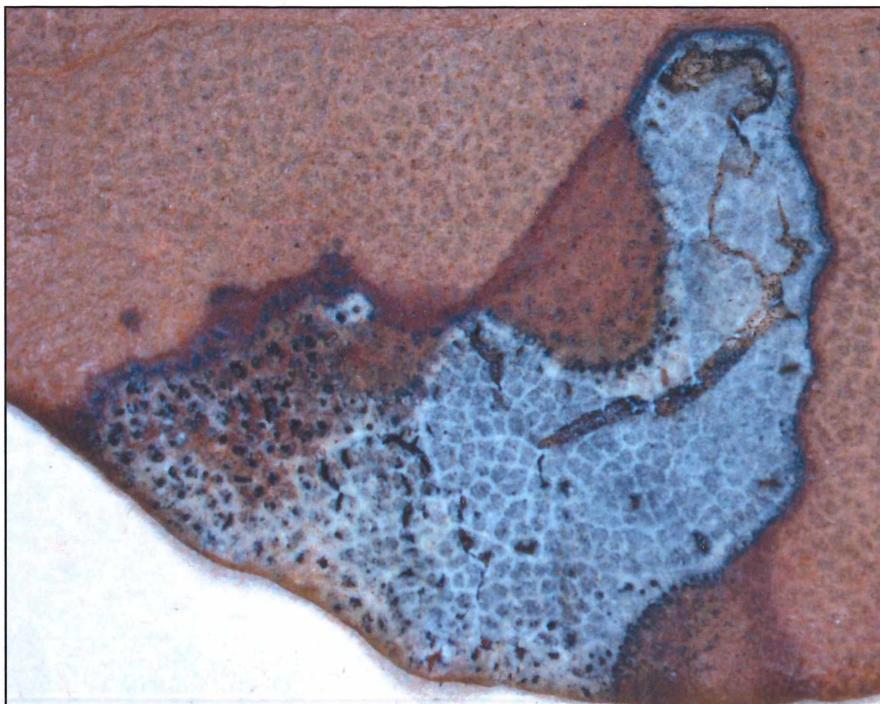
Details of previous page. Top leaf: silvery blotch with dark brown patch of frass in the centre.



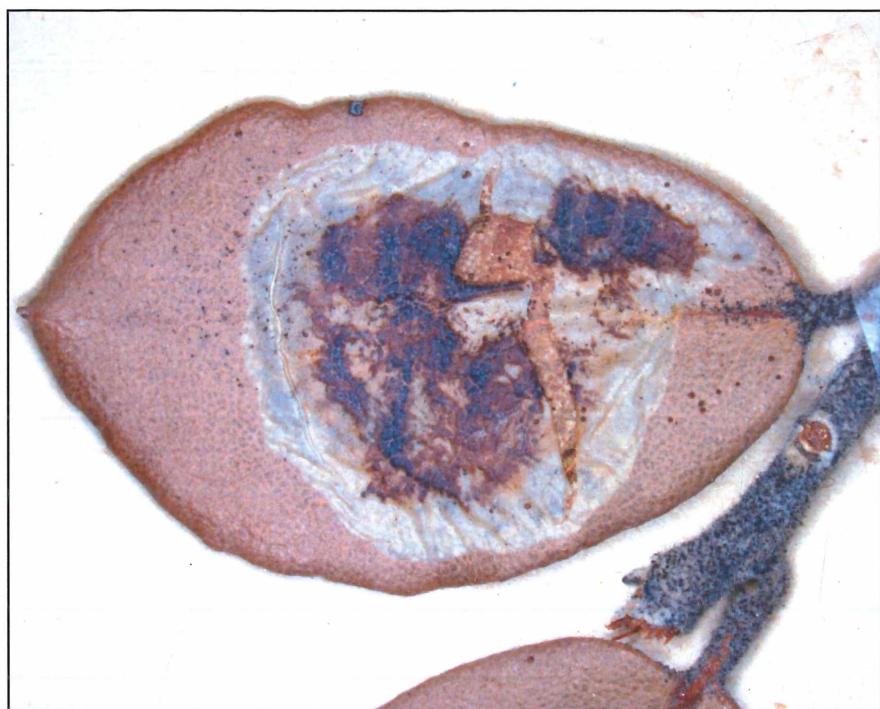
Fagaceae

**Quercus ilex L.**

*Phyllonorycter belotella* (STAUDINGER, 1859) (Lepidoptera: Gracillariidae)



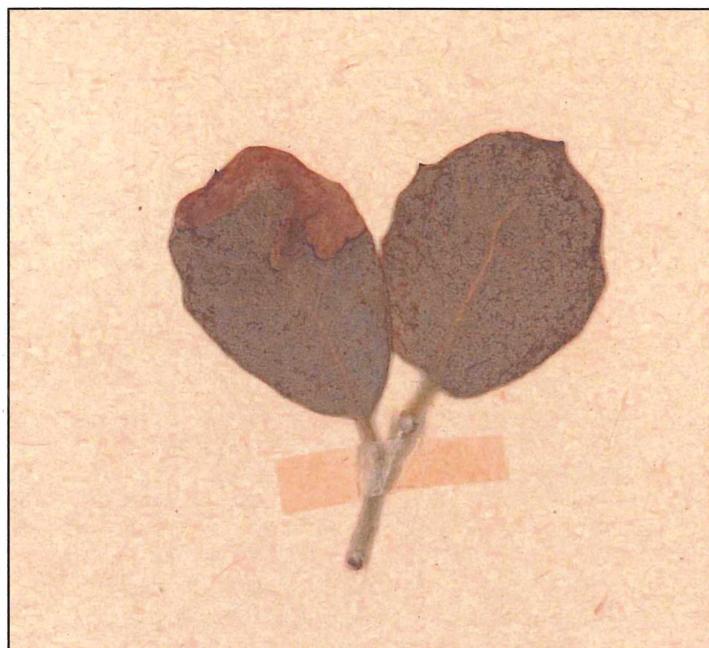
Details of page next to last. Leaves at the bottom: silvery blotch mines.



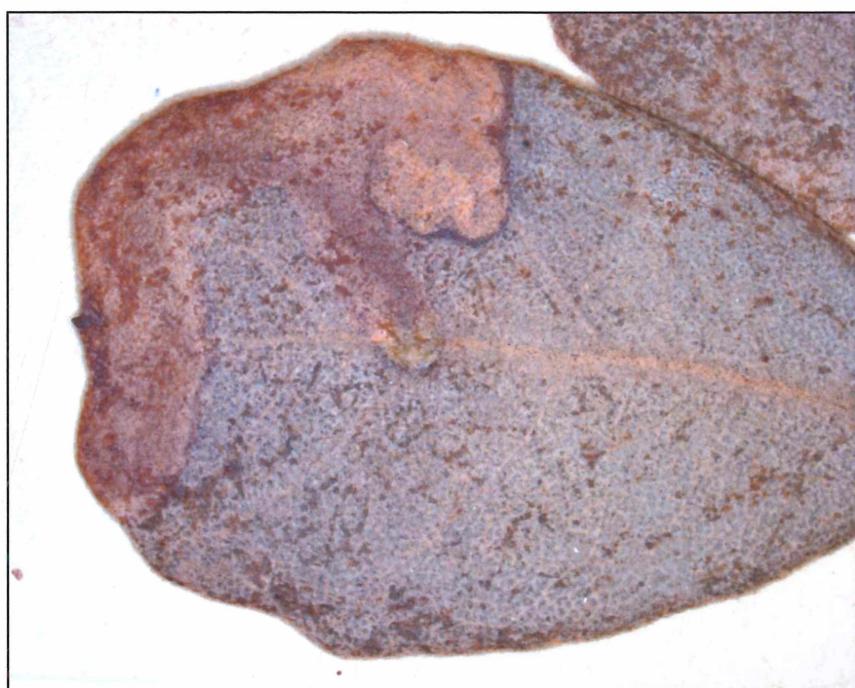
Fagaceae

**Quercus ilex L.**

*Stigmella suberivora* (STAINTON, 1869) (Lepidoptera: Nepticulidae)

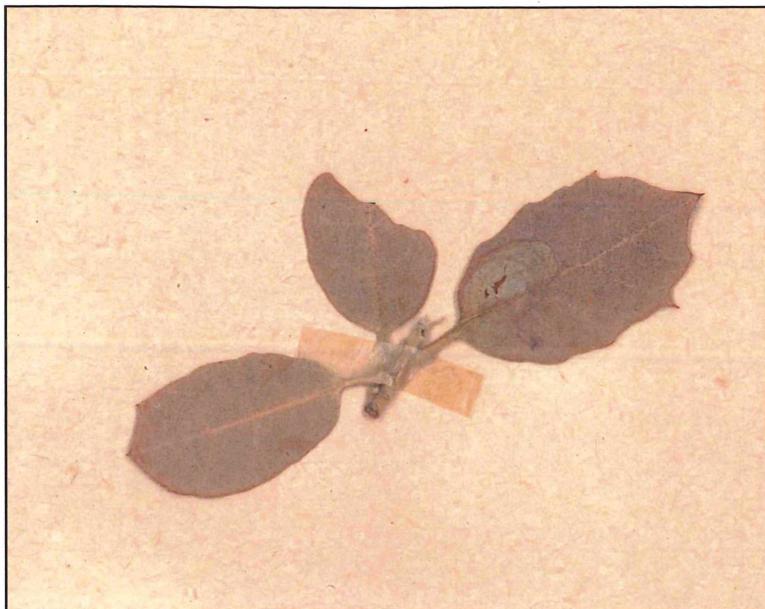


Top: overview. Bottom: detail of mine; irregular corridor with broad frass line.



Leafminers-Herbarium, M.Hering, Lot 14, no. 267  
[Nepticula suberivora Stt. emended to *Stigmella suberivora* Stt.]  
Albarracin, Aragonien, Juni 1933

Fagaceae  
**Quercus ilex L.**  
*Ectoedemia suberis* (STAINTON, 1869) (Lepidoptera: Nepticulidae)



Top: overview. Bottom: oval, large blotch mine; frass at the side of the mine.



Leafminers-Herbarium, M.Hering, Lot 14, no. 268  
[*Nepticula viridella* Mend. emended to *Stigmella viridella* Mend.]  
Albarracin, Aragonien, Juni 1933

Fagaceae  
**Quercus ilex L.**  
*Orchestes pilosus* (FABRICIUS, 1781) (Coleoptera: Curculionidae)



Leafminers-Herbarium, M.Hering, Lot 14, no. 269  
[*Rhynchaenus pilosus* Fab.]  
Albarracin, Aragonien, Juni 1933

Fagaceae  
**Quercus ilex L.**  
*Orchestes pilosus* (FABRICIUS, 1781) (Coleoptera: Curculionidae)



Details of previous page. Top: blotch mine in the leaf tip. Bottom: leaf underside; mine starts in the underside of a vein.



Fagaceae

**Quercus pubescens Willd.**

*Ectoedemia caradjai* (GROSCHKE, 1944) (Lepidoptera: Nepticulidae)



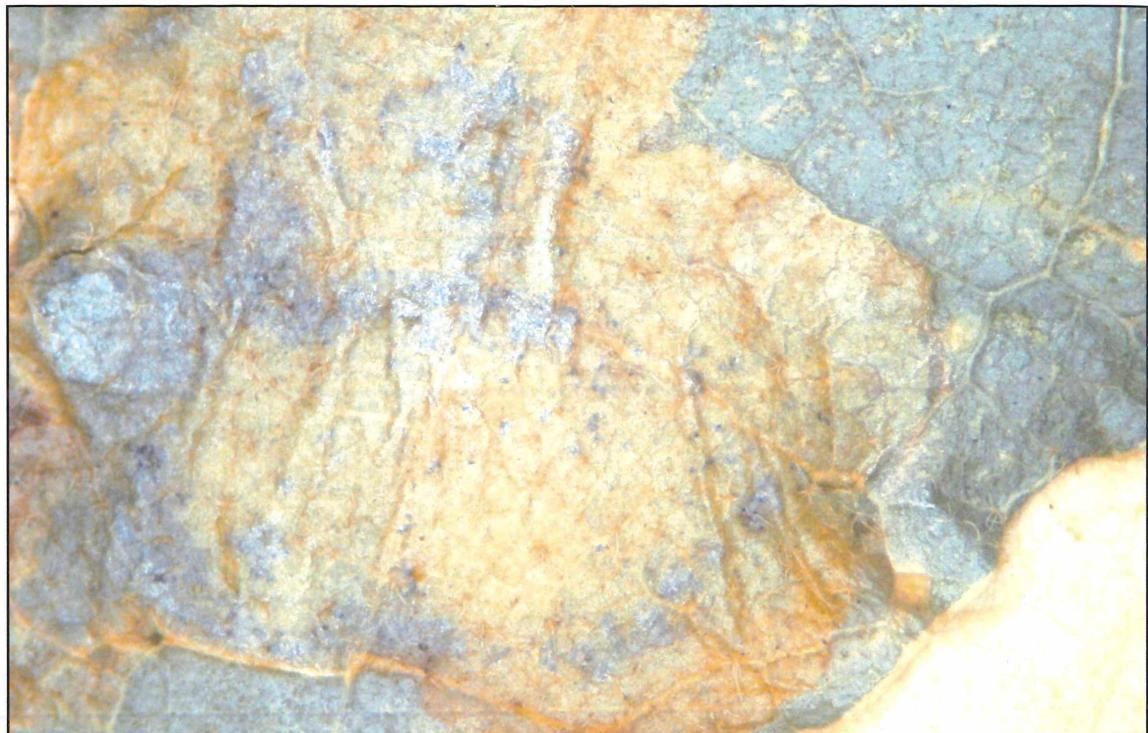
In 1932 HERING described the mine of a new species (*Nepticula caradjai*) but not the animal. According to the ICBN (Art. 1.3.6) "names proposed after 1930 for the work of extant animals" are excluded from the provisions. In 1944 GROSCHKE described the adult and the mine of the species.

Leafminers-Herbarium, M.Hering, Lot 10, no. 200  
[*Nepticula caradjai* Hering] Tighina, Bessarabien [Moldavia], IX. 1930

Fagaceae

**Quercus pubescens Willd.**

*Ectoedemia caradjai* (GROSCHKE, 1944) (Lepidoptera: Nepticulidae)



Details of previous page. Top: leaf on the top; details of pear shaped blotch mine with frass in basal part.  
Bottom: leaf below.



Fagaceae  
**Quercus robur L.**  
*Tischeria decidua* WOCKE, 1876 (Lepidoptera: Tischeriidae)



Top: overview. Bottom: large blotch mine, in the centre the opened area of discoidal cocoon.



Leafminers-Herbarium, M.Hering, Lot 1, no. 5  
Berlin, VIII.1929

Fagaceae  
**Quercus robur L.**  
*Tischeria decidua* WOCKE, 1876 (Lepidoptera: Tischeriidae)



Top: overview. Bottom: large blotch mine, in the centre the opened area of discoidal cocoon.

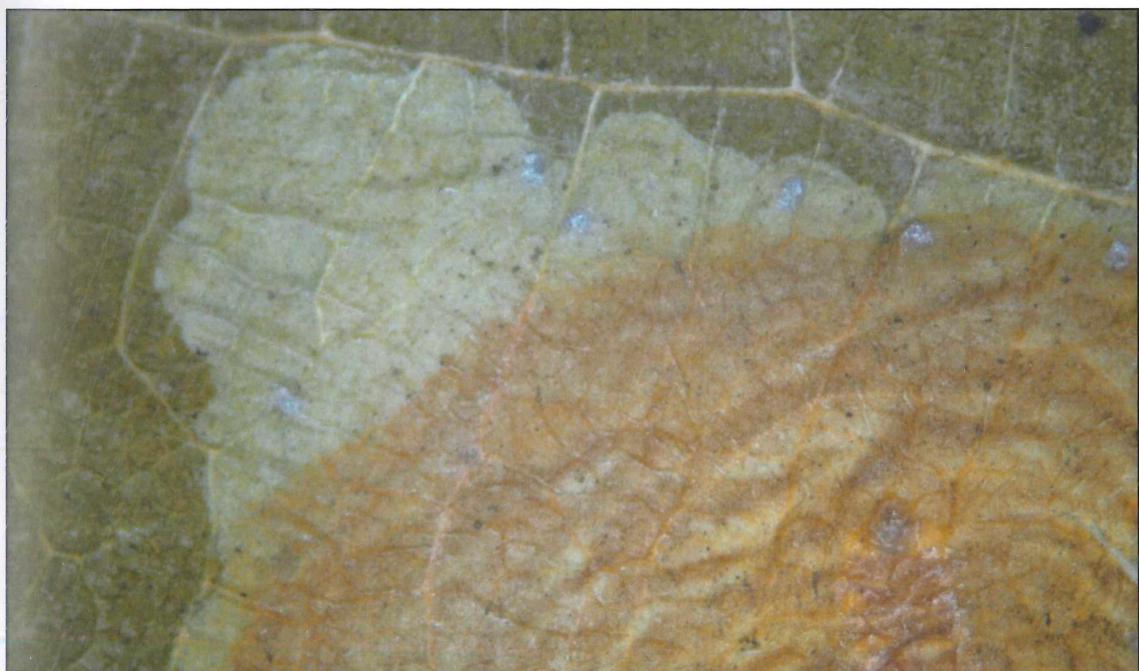


Leafminers-Herbarium, M.Hering, Lot 1a, no. 5  
Berlin, VIII.1929

Fagaceae  
**Quercus robur L.**  
*Tischeria dodonaea* STANTON, 1858 (Lepidoptera: Tischeriidae)



Top: overview. Bottom: terminal part of the large blotch mine.

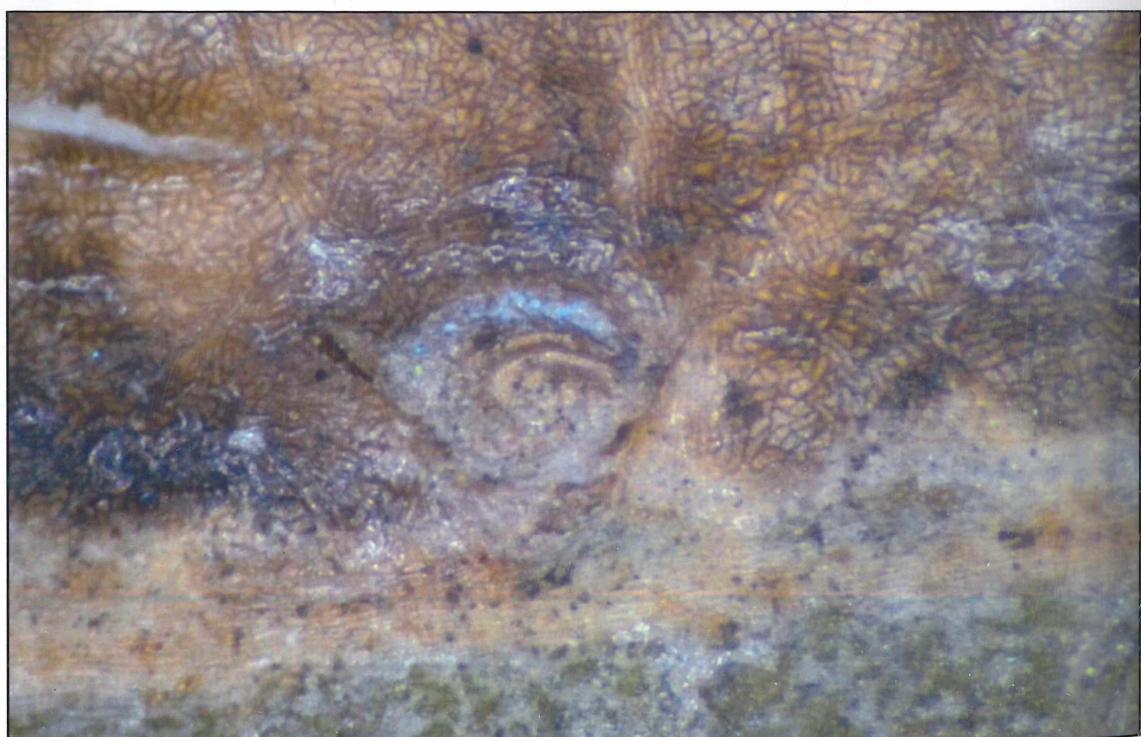


Leafminers-Herbarium, M.Hering, Lot 2, no. 29  
Crossen / Oder, IX.1929

Fagaceae  
**Quercus robur L.**  
*Tischeria dodonaea* STANTON, 1858 (Lepidoptera: Tischeriidae)



Details of previous page. Top: characteristic semicircular, concentric lines around oviposition site.  
Bottom: oviposition site.



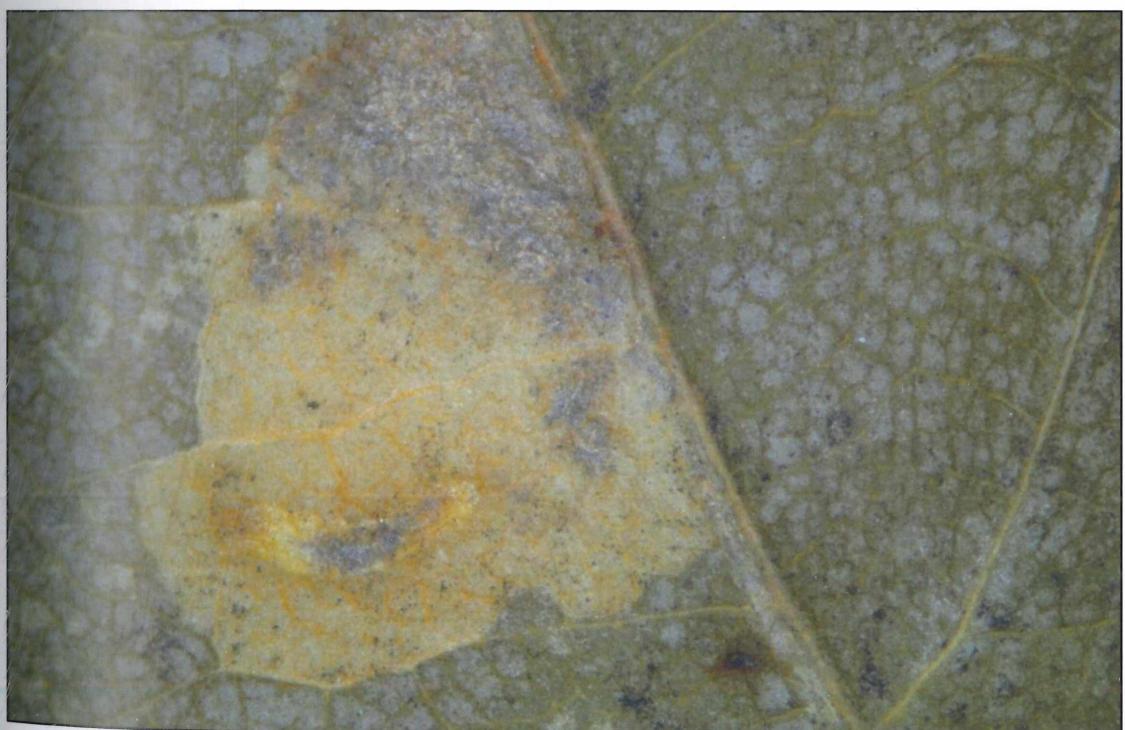
Fagaceae

**Quercus robur L.**

*Ectoedemia albifasciella* (VON HEINEMANN, 1871) (Lepidoptera: Nepticulidae)



Top: overview. Bottom: squarish blotch mine with larva.

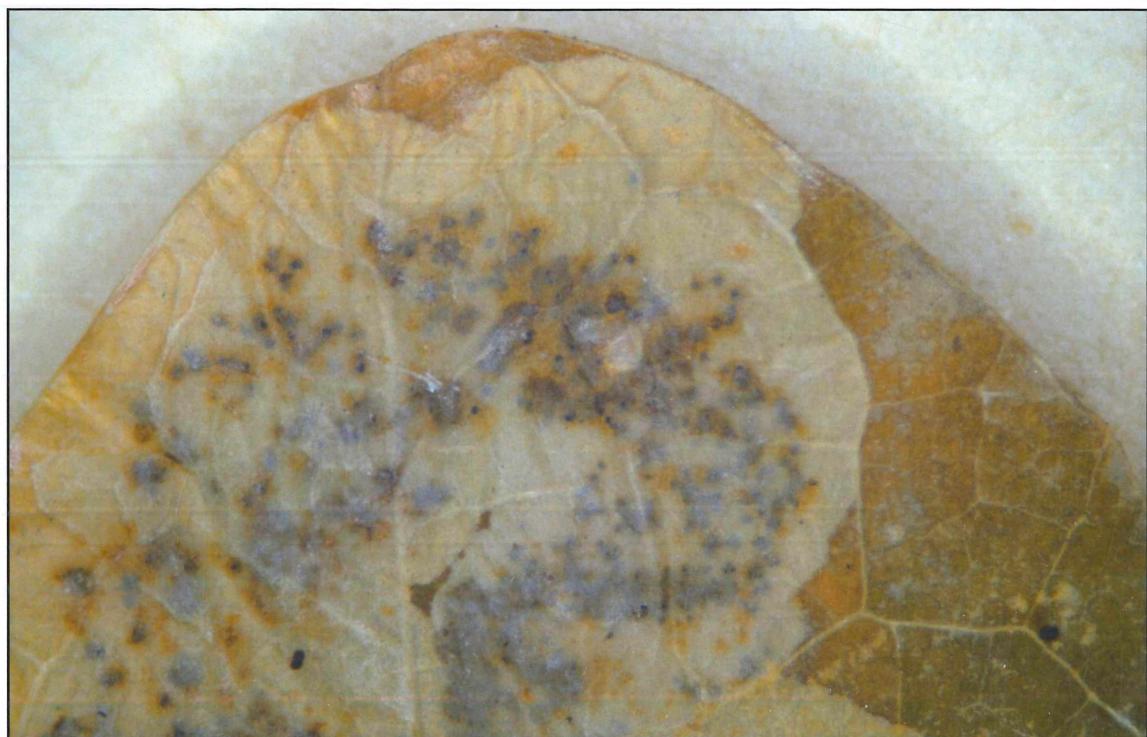


Leafminers-Herbarium, M.Hering, Lot 2, no. 30  
[Nepticula albifasciella Hein.] Crossen / Oder, IX.1929

Fagaceae  
**Quercus robur L.**  
*Profenus pygmaea* (KLUG, 1816) (Hymenoptera: Tenthredinidae)



Top: overview. Bottom: voluminous, pale blotch with frass scattered in large grains.



Leafminers-Herbarium, M.Hering, Lot 2, no. 31  
[*Fenusella pygmaea* Klug.] Crossen / Oder, IX.1929

Fagaceae

**Quercus robur L.**

*Tischeria ekebladella* (BJERKANDER, 1795) (Lepidoptera: Tischeriidae)



Overview: the position of the larva in the whitish blotch is marked with a red arrow.

Leafminers-Herbarium, M.Hering, Lot 3, no. 51  
[*Tischeria complanella* Hbn.] Berlin-Finkenkrug, Oktober 1929

Fagaceae  
**Quercus robur L.**  
*Tischeria ekebladella* (BJERKANDER, 1795) (Lepidoptera: Tischeriidae)



Details of previous page. Top: surface of whitish upper-surface blotch. Bottom: larva, dried, extracted from blotch.



Fagaceae

**Quercus robur L.**

*Ectoedemia subbimaculella* (HAWORTH, 1828) (Lepidoptera: Nepticulidae)



Top: overview. Bottom: details of blotch linked to the midrib.



Leafminers-Herbarium, M.Hering, Lot 3, no. 52  
[Nepticula subbimaculella Hw.] Berlin-Finkenkrug, Oktober 1929

Fagaceae

**Quercus robur L.**

*Coleophora flavigennella* (DUPONCHEL, 1843) (Lepidoptera: Coleophoridae)



Leafminers-Herbarium, M.Hering, Lot 4, no. 66  
[*Coleophora flavigennella* H.S.] Berlin-Karlshorst, Juni 1929

Fagaceae

**Quercus robur L.**

*Coleophora flavigennella* (DUPONCHEL, 1843) (Lepidoptera: Coleophoridae)



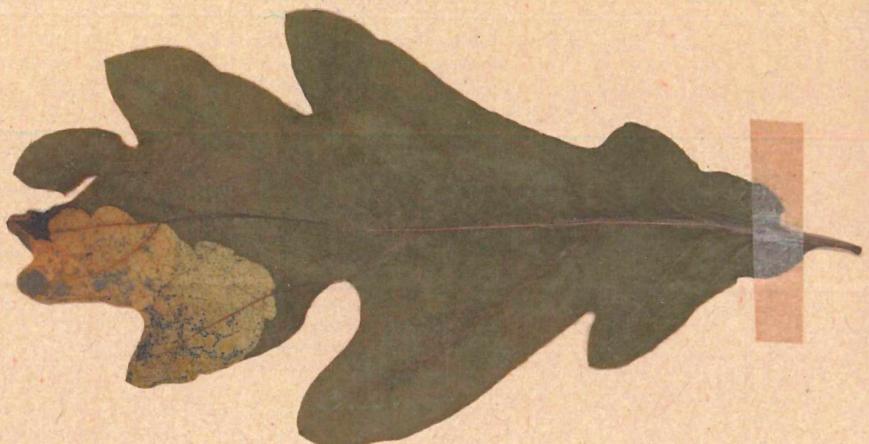
Details of previous page. Different aspects of feeding windows. Top: left leaf. Bottom: right leaf.



Fagaceae

**Quercus robur L.**

*Dyseriocrania subpurpurella* (HAWORTH, 1828) (Lepidoptera: Eriocraniidae)



Leafminers-Herbarium, M.Hering, Lot 7, no. 126  
[Eriocrania fastuosella Zeller] Berlin-Buch, Mai 1931

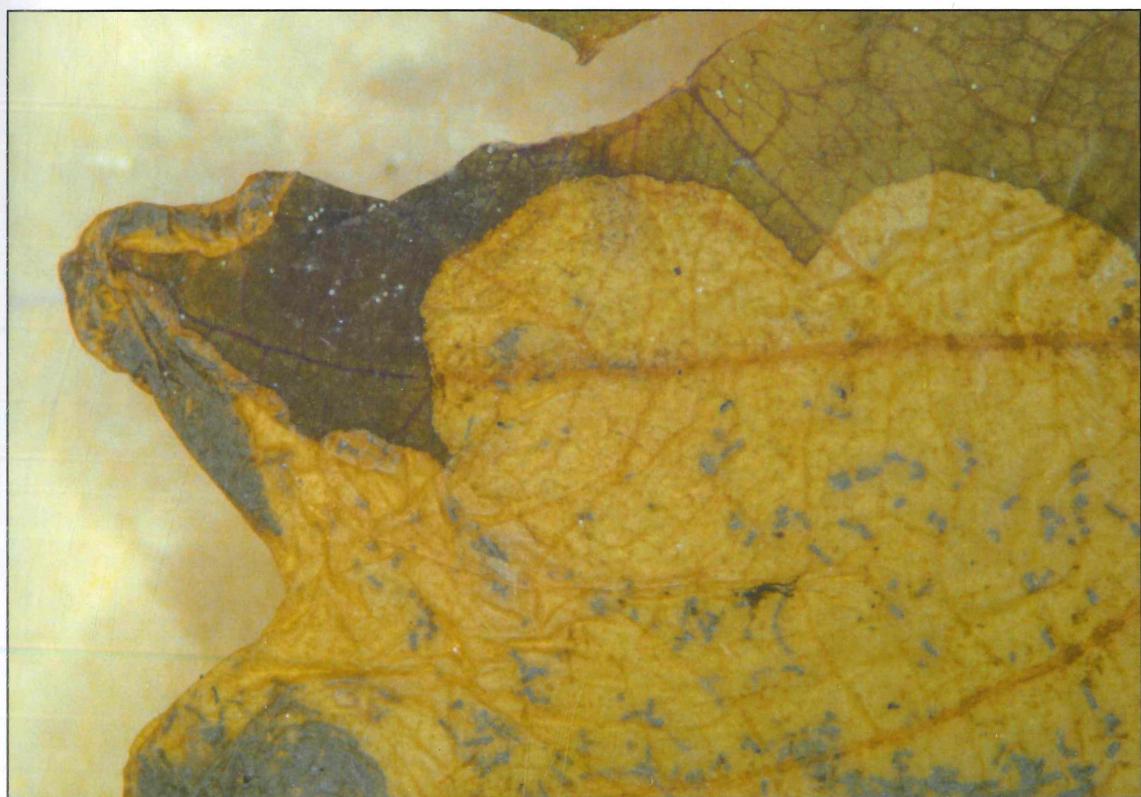
Fagaceae

**Quercus robur L.**

*Dyseriocrania subpurpurella* (HAWORTH, 1828) (Lepidoptera: Eriocraniidae)



Details of previous page: large blotch mines. Top: leaf at the bottom of the page. Bottom: top leaf.



Fagaceae  
**Quercus robur L.**  
*Stigmella samiatella* (ZELLER, 1839) (Lepidoptera: Nepticulidae)



Leafminers-Herbarium, M.Hering, Lot 7, no. 127  
[Nepticula samiatella H.S.] Berlin-Buch, Mai 1931

Fagaceae

**Quercus robur L.**

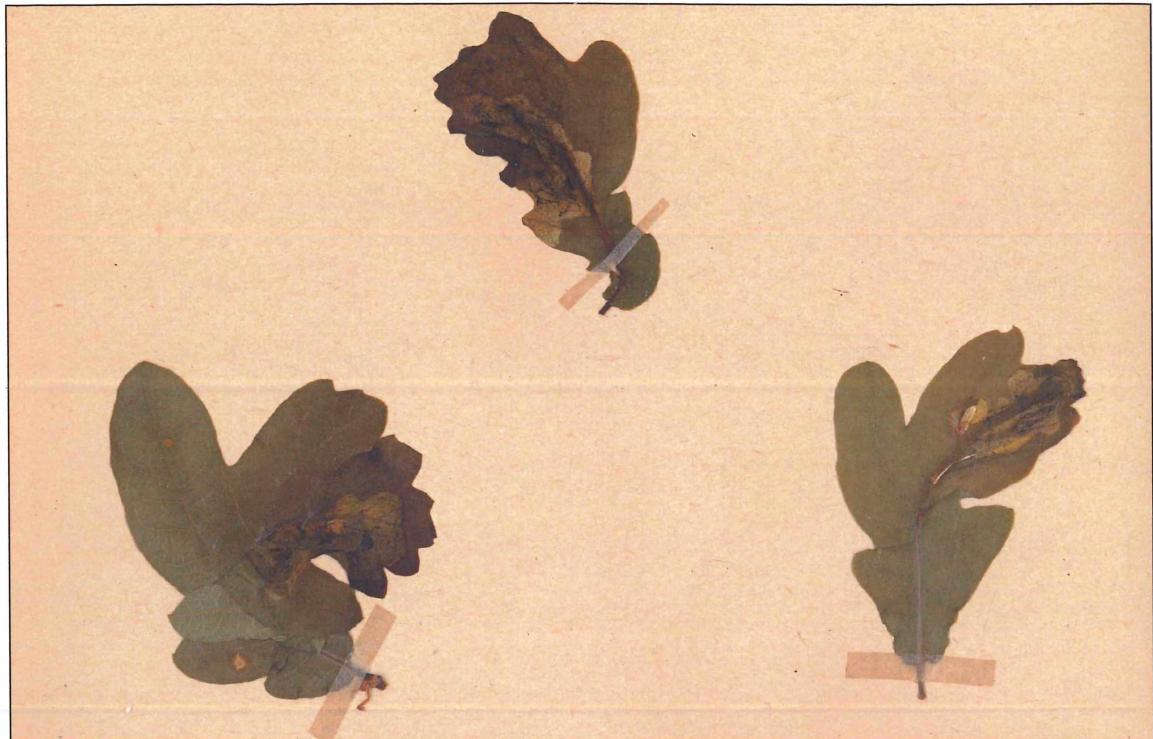
*Stigmella samiatella* (ZELLER, 1839) (Lepidoptera: Nepticulidae)



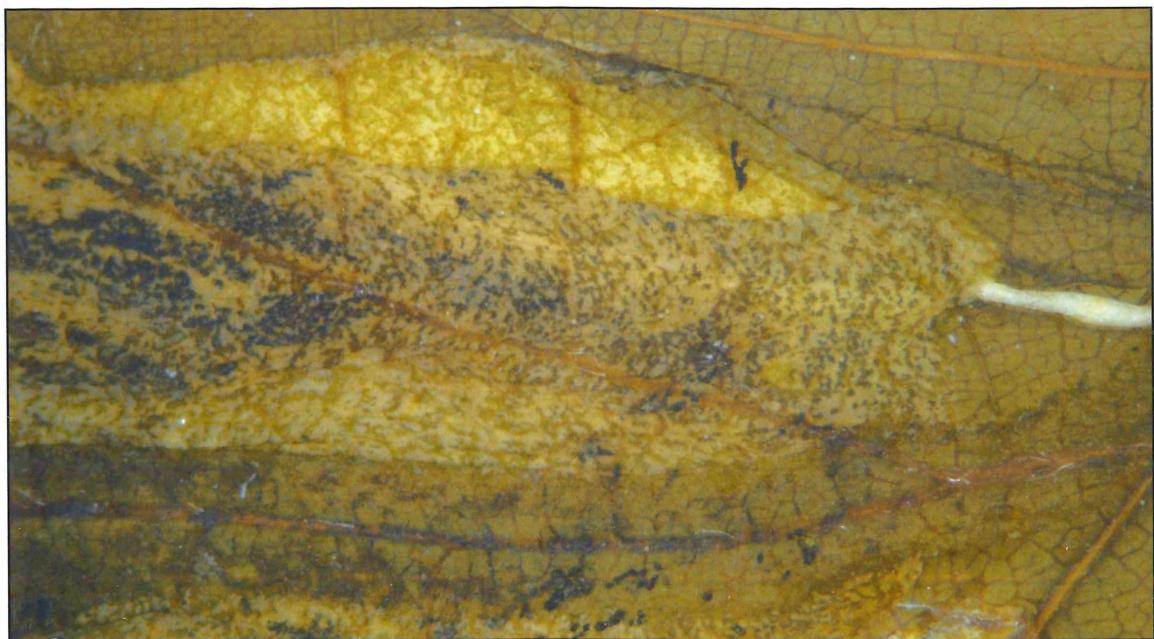
Details of previous page. Top: early corridor, frass as a central band, interrupted from time to time.  
Bottom: end of corridor.



Fagaceae  
**Quercus robur L.**  
*Orchestes quercus* (LINNAEUS, 1758) (Coleoptera: Curculionidae)



Top: overview. Bottom: detail of blotch mine.

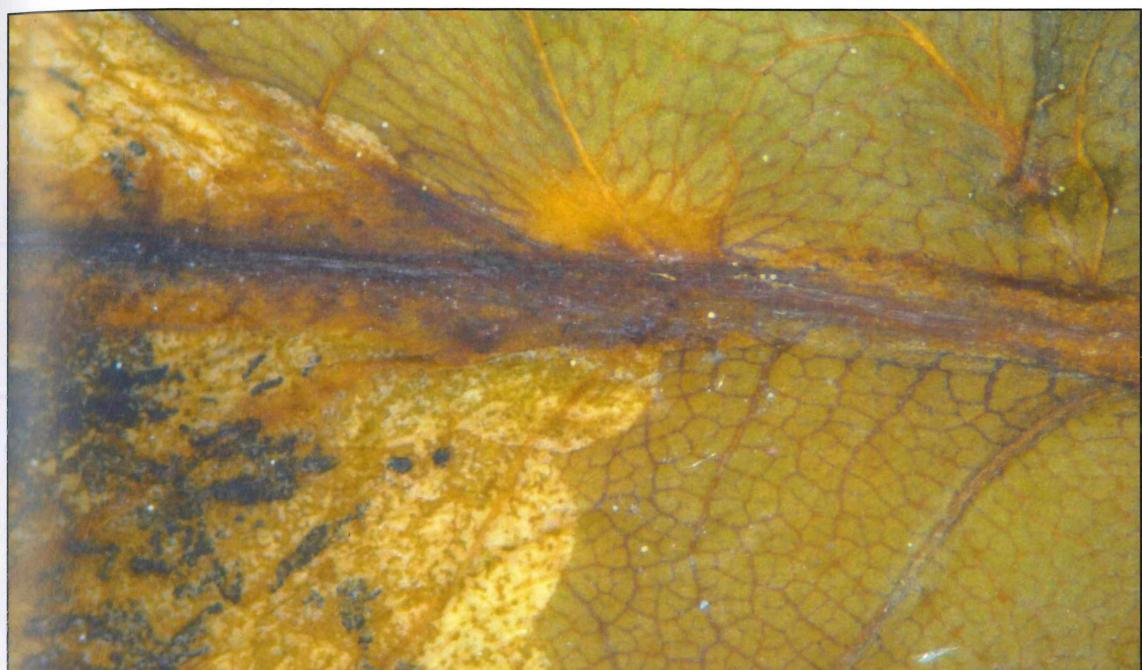


Leafminers-Herbarium, M.Hering, Lot 7, no. 128  
[*Orchestes quercus* L.] Berlin-Buch, Mai 1931

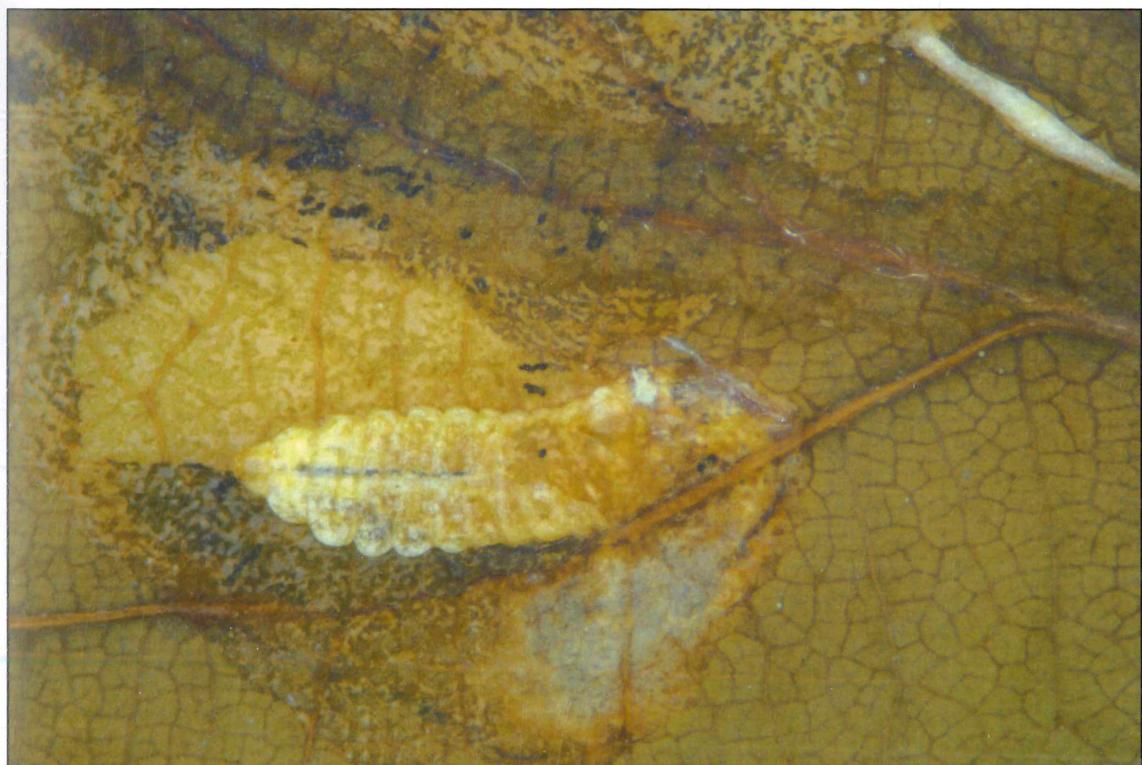
Fagaceae

**Quercus robur L.**

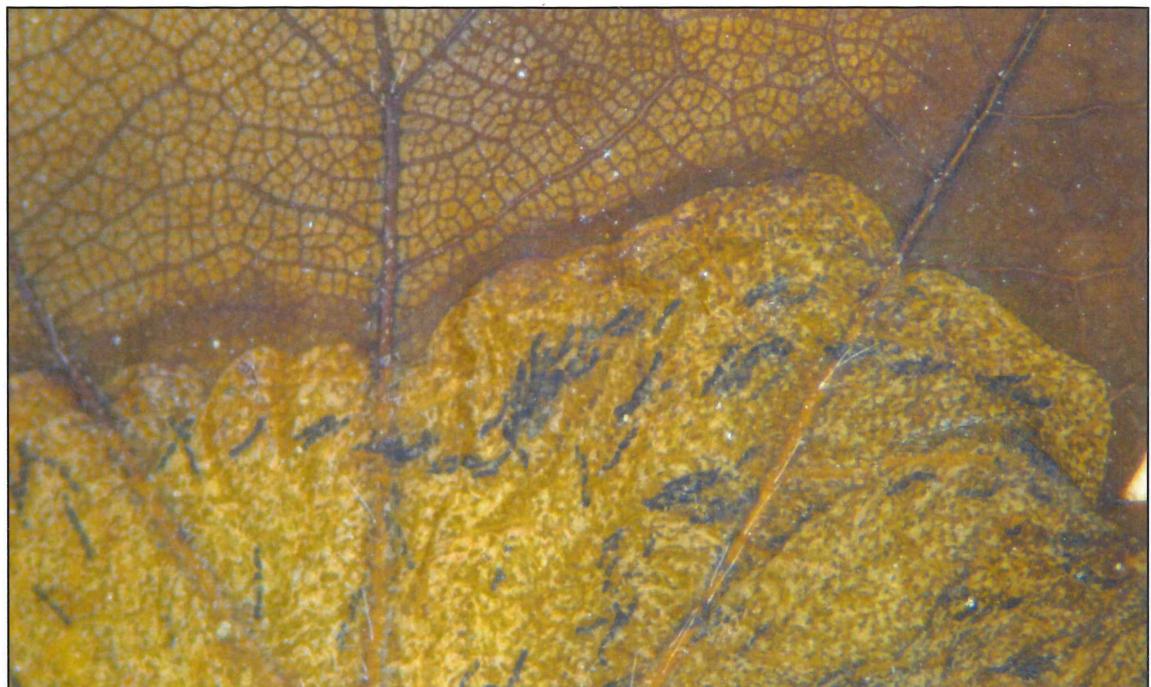
*Orchestes quercus* (LINNAEUS, 1758) (Coleoptera: Curculionidae)



Details of previous page. Top: starting area with a mine within the midrib. Bottom: feeding area of larva.



Fagaceae  
**Quercus robur L.**  
*Orchestes quercus* (LINNAEUS, 1758) (Coleoptera: Curculionidae)



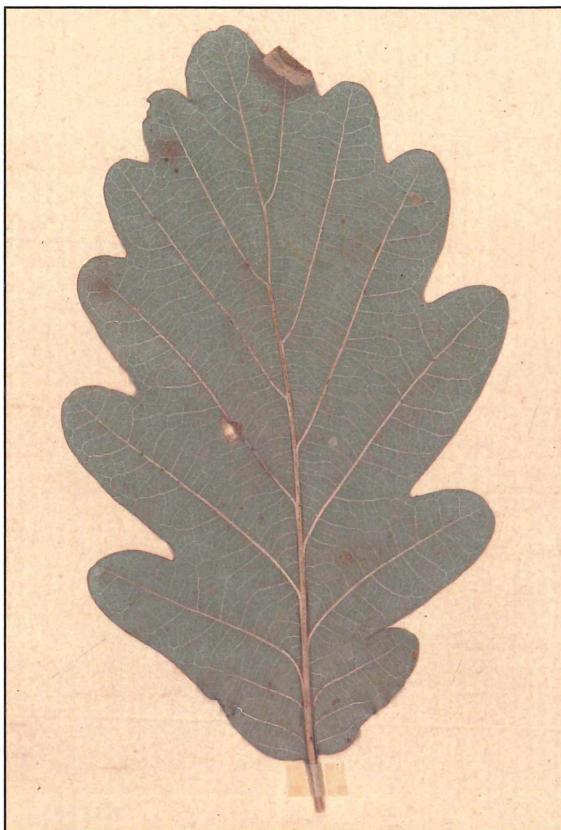
Details of page next to last. Top: blotch mine with frass in threads. Bottom: late feeding stage, contorted leaf with folds.



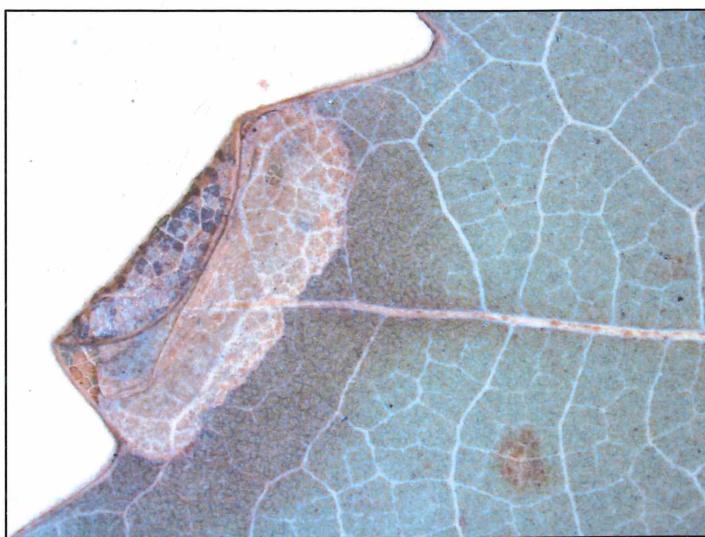
Fagaceae

**Quercus robur L.**

*Phyllonorycter heegeriella* (ZELLER, 1846) (Lepidoptera: Gracillariidae)



Top: overview. Bottom: detail of mine in a leaf lobe.



Leafminers-Herbarium, M.Hering, Lot 21, no. 402  
[*Lithocolletis heegeriella* Z.] Oderberg/Oder, Brandenburg, August 1936

Fagaceae

**Quercus robur L.**

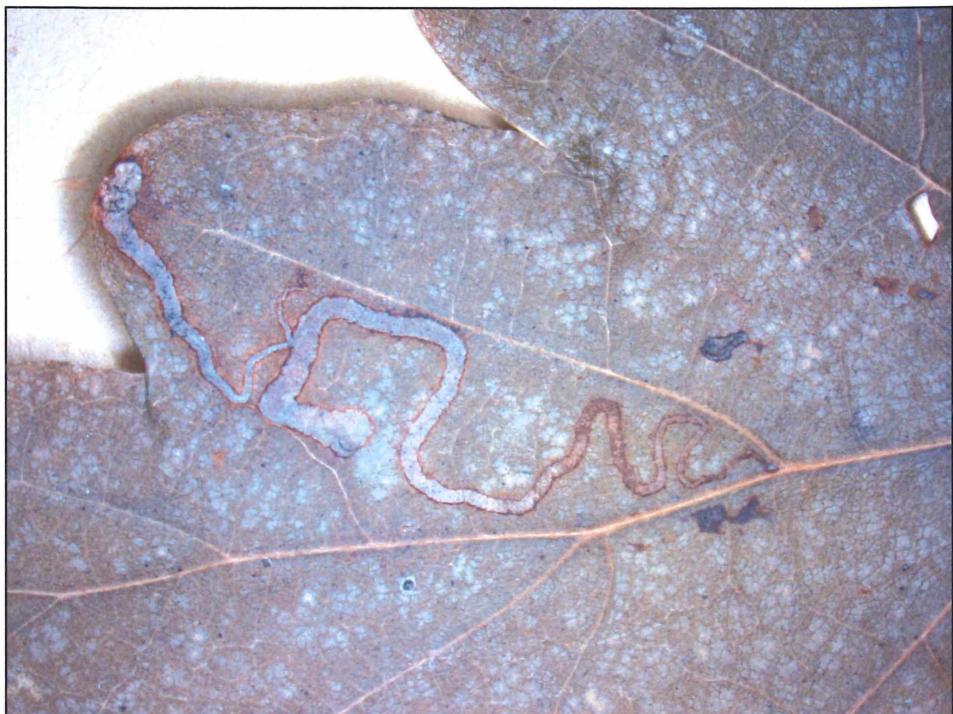
*Stigmella basiguttella* (VON HEINEMANN, 1862) (Lepidoptera: Nepticulidae)



Leafminers-Herbarium, M.Hering, Lot 16, no. 312  
[Nepticula basiguttella Hein. emended to Stigmella basiguttella Hein.]  
Berlin – Finkenkrug, October 1934

Fagaceae  
**Quercus robur L.**

*Stigmella basiguttella* (VON HEINEMANN, 1862) (Lepidoptera: Nepticulidae)



Details of previous page: mine starts near a vein and is a sinuous corridor filled with frass, becoming slowly wider.



Fagaceae  
**Quercus robur L.**

*Acrocercops brongniardella* (FABRICIUS, 1798) (Lepidoptera: Gracillariidae)



Leafminers-Herbarium, M.Hering, Lot 8, no. 143  
[*Coriscium brongniardellum* F.] Berlin-Finkenkrug, Juli 1931

Fagaceae

**Quercus robur L.**

*Acrocercops bronniardella* (FABRICIUS, 1798) (Lepidoptera: Gracillariidae)



Details of previous page. Top: tortuous early stage corridor in the upper-surface epidermis. Bottom: later stage epidermal blotch.



Fagaceae

**Quercus robur L.**

*Phyllonorycter lautella* (ZELLER, 1846) (Lepidoptera: Gracillariidae)



Leafminers-Herbarium, M.Hering, Lot 13, no. 241  
[*Lithocolletis lautella* Zeller] Berlin-Wannsee, Brandenburg, IX. 1932

Fagaceae

**Quercus robur L.**

*Phyllonorycter lautella* (ZELLER, 1846) (Lepidoptera: Gracillariidae)



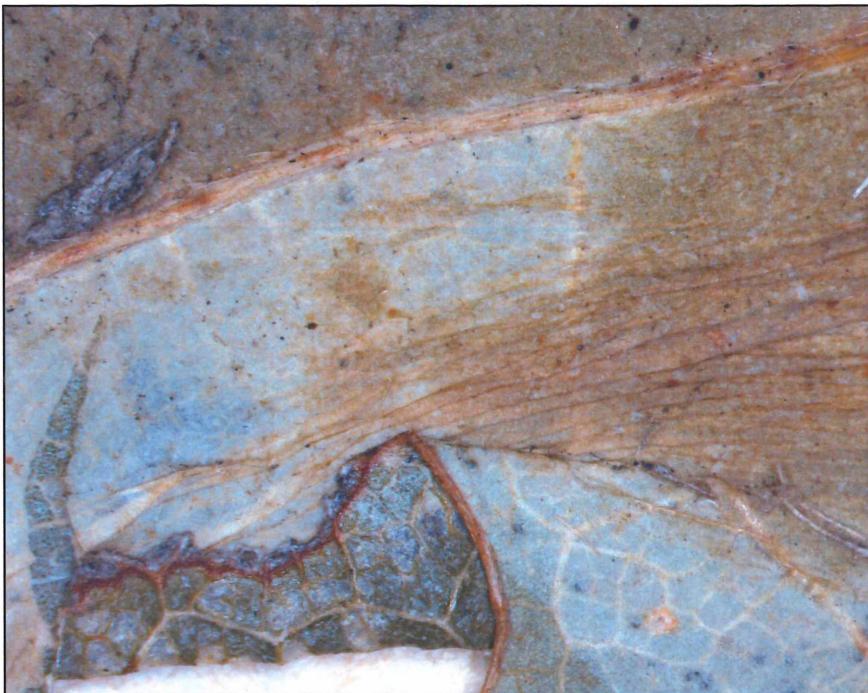
Details of previous page. Top: several large mines between two side veins each; beginning of leaf contraction. Bottom: mine with sharp folds in lower epidermis of leaf underside; frass in corner.



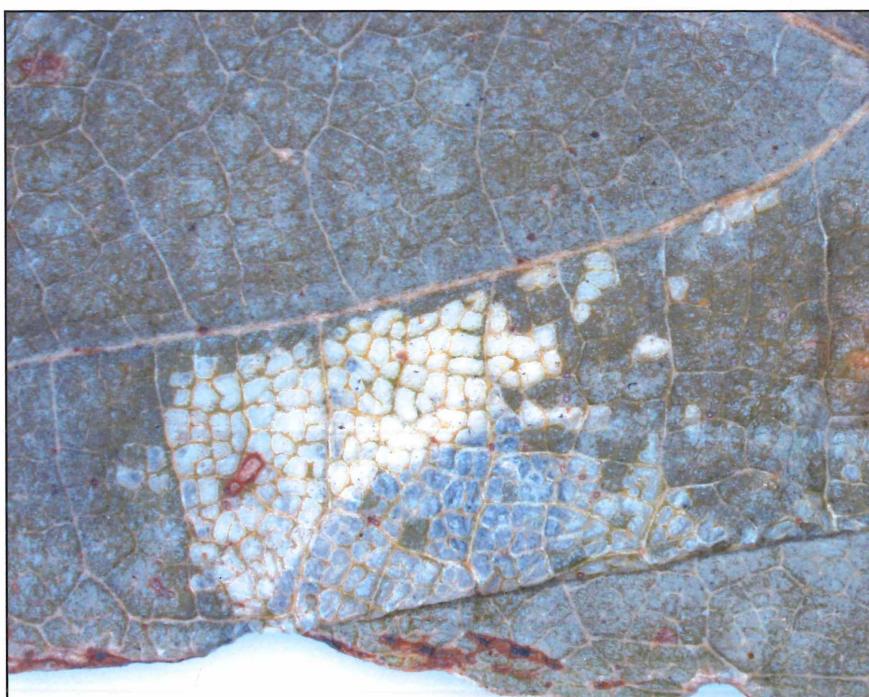
Fagaceae

**Quercus robur L.**

*Phyllonorycter lautella* (ZELLER, 1846) (Lepidoptera: Gracillariidae)



Details of page next to last. Top: mine with folds and contracted leaf margin. Bottom: upper side of leaf.



# Index

Species names are given in bold-italics, invalid names or combinations of names in italics. Page numbers refer to the overview. Family names are given in blue.

## A -

- Acrocercops bronniardella* (Fabricius, 1798) 102  
*Acrocercops hofmanniella* Schl. 34  
*Agromyza bicophaga* Hering, 1925 53  
*Agromyza frontella* (Rondani, 1875) 41, 42  
*Agromyza genistae* Hend. 18  
*Agromyza johannae* de Meijere, 1924 14  
*Agromyza lathyri* Hendel, 1923 47  
*Agromyza nana* Meigen, 1830 43  
*Agromyza pulla* Meigen, 1830 18  
**Agromyzidae** 5, 10, 14, 18, 26, 32, 36, 38, 41, 42, 43, 45, 47, 53  
*Apterona crenulella* Bruand, 1853 50  
*Apterona helicoidella* (Vallot, 1827) 50

## C -

- Cemostoma wailesella* Stt. 24  
*Coleophora colutella* (Fabricius, 1794) 7  
*Coleophora crocinella* Tgstr. 7  
*Coleophora flavigennella* (Duponchel, 1843) 90  
*Coleophora serenella* Z. 7  
*Coleophora vestalella* Staudinger, 1859 3  
*Coleophora vibicella* (Hübner, 1813) 21  
**Coleophoridae** 3, 7, 21, 90  
*Coriscium bronniardellum* F. 102  
**Curculionidae** 60, 77, 96

## D -

- Dysericrana subpurpurella* (Haworth, 1828) 92

## E -

- Ectoedemia albifasciella* (von Heinemann, 1871) 85

*Ectoedemia caradjai* (Groschke, 1944)

79

*Ectoedemia subbimaculella* (Haworth, 1828) 89

*Ectoedemia suberis* (Stainton, 1869) 76  
*Eriocrania fastuosella* Z. 92

**Eriocraeniidae** 92

## F -

*Fenusella pygmaea* Klug. 86

## G -

*Gracilaria kollarieilla* Zell. 9, 23

**Gracillariidae** 9, 23, 28, 34, 57, 66, 68, 69, 72, 99, 102, 104

## L -

*Leucoptera coronillae* (Hering, 1933) 16

*Leucoptera laburnella* (Stainton, 1851) 24, 30

*Leucoptera phyllocytisi* H. 16

*Leucoptera spartifoliella* (Hübner, [1813]) 12

*Liriomyza cicerina* (Rondani, 1875) 45

*Liriomyza congesta* (Becker, 1903) 32, 36, 38

*Liriomyza trifolii* Burgess in Comstock, 1880 32, 36, 38

*Liriomyza variegata* Mgn. 5, 10

*Lithocolletis faginella* Z. 57

*Lithocolletis heegeriella* Z. 99

*Lithocolletis joviella* Cst. 72

*Lithocolletis lautella* Z. 104

*Lithocolletis messaniella* Z. 69

*Lithocolletis quercus* A. & H. 68

**Lyonetiidae** 12, 16, 24, 30

## M -

*Micrurapteryx kollarieilla* (Zeller, 1838) 9, 13, 28

## N -

- Nepticula albifasciella* Hein. 85  
*Nepticula basalella* 64  
*Nepticula basiguttella* Hein. 100  
*Nepticula caradjai* Hrg. 79  
*Nepticula samiatella* 94  
*Nepticula subbimaculella* Hw. 89  
*Nepticula suberivora* Stt. 75  
*Nepticula viridella* Mend. 76  
**Nepticulidae** 62, 64, 75, 76, 79, 85, 89, 94, 100

## O -

- Orchestes fagi* (Linnaeus, 1758) 60  
*Orchestes pilosus* (Fabricius, 1781) 77  
*Orchestes quercus* (Linnaeus, 1758) 96

## P -

- Parectopa hofmanniella* Schl. 34  
*Parectopa kollaris* Z. 28  
*Parornix fagivora* (Frey, 1861) 66  
*Phyllonorycter belotella* (Staudinger, 1859) 72  
*Phyllonorycter heegeriella* (Zeller, 1846) 99  
*Phyllonorycter lautella* (ZELLER, 1846) 104  
*Phyllonorycter maestingella* (Müller, 1764) 57  
*Phyllonorycter messaniella* (Zeller, 1846) 69  
*Phyllonorycter quercus* (Amsel & Hering, 1931) 68

***Phytoliriomyza variegata*** (Meigen, 1830) 5, 10

***Phytomyza cytisi*** Brischke, 1880 26  
***Profenus pygmaea*** (Klug, 1816) 86  
**Psychidae** 50

## R -

- Rhynchaenus fagi* L. 60  
*Rhynchaenus pilosus* Fab. 77

## S -

- Sauterina hofmanniella*** (Schleich, 1867) 34  
***Stigmella basiguttella*** (von Heinemann, 1862) 100  
***Stigmella hemargyrella*** (Kollar, 1832) 64  
***Stigmella samiatella*** (Zeller, 1839) 94  
***Stigmella suberivora*** (Stainton, 1869) 75  
***Stigmella tityrella*** (Stainton, 1854) 62  
***Stigmella viridella*** Mend. 76

## T -

- Tischeria complanella*** Hbn. 87  
***Tischeria decidua*** Wocke, 1876 81, 82  
***Tischeria dodonaea*** Stainton, 1858 83  
***Tischeria ekebladella*** (Bjerkander, 1795) 87  
**Tischeriidae** 81, 82, 83, 87  
**Tenthredinidae** 86

## Acknowledgements

The authors are indebted to Bruno Wallnöfer (NHMW) for botanical help.

We especially recommend the excellent website [www.bladmineerders.nl](http://www.bladmineerders.nl) from our colleague Willem N. Ellis, Zoölogisch Museum, Universiteit van Amsterdam.

## Literature

<http://www.bladmineerders.nl/> (vid. December 2010 – September 2016)

GROSCHKE, F. 1944: Neues über Minierer aus dem Mittelmeergebiet.- Mitteilungen der Münchener Entomologischen Gesellschaft 34(1): 115-124.

HERING, M. 1932: Die Minenfauna von Tighina (Bender) in Bessarabien (2. Beitrag zur Kenntnis der Minenfauna von Gross-Rumänien).- Bulletin de la Section Scientifique de l'Académie Roumaine XV(1-2): 13-34.

HERING, E.M. 1957: Bestimmungstabellen der Blattminen von Europa einschliesslich des Mittelmeerbeckens und der Kanarischen Inseln.- Uitgeverij Dr. W. Junk, 'S-Gravenhage, 3 Bände, 1406 pp.

HUEMER, P. 2013: Die Schmetterlinge Österreichs (Lepidoptera). Systematische und faunistische Checkliste.- Studiohefte 12, Verlag Tiroler Landesmuseum Ferdinandeum, Innsbruck, 304pp.

HUEMER, P. & TARMANN, G. 1993: Die Schmetterlinge Österreichs (Lepidoptera).- Verlag Tiroler Landesmuseum Ferdinandeum, Innsbruck, 224 pp.

INTERNATIONAL CODE OF ZOOLOGICAL NOMENCLATURE: <http://www.iczn.org/iczn/index.jsp> (vid. April 2016)

KARSHOLT, O. & RAZOWSKI, J. 1996: The Lepidoptera of Europe. A Distributional Checklist.- Apollo Books, Stenstrup, 380 pp.

LÖDL, M. & GAAL-HASZLER, S. 2010: Illustrated Catalogue of Rebel's herbarium of leafminers at the Natural History Museum Vienna.- Quadrifina 9: 15-481.

LÖDL, M., GAAL-HASZLER, S. & JOVANOVIC-KRUSPEL, S. 2012: Illustrated Catalogue of Hering's herbarium of leafminers at the Natural History Museum Vienna, part 1 (plant families A).- Quadrifina 10: 1-180.

LÖDL, M., GAAL-HASZLER, S. & JOVANOVIC-KRUSPEL, S. 2014: Illustrated Catalogue of Hering's herbarium of leafminers at the Natural History Museum Vienna, part 2 (plant families B-E).- Quadrifina 11: 1-219.

STAUDINGER, O. & REBEL, H. 1901: Catalog der Lepidopteren des Palaearctischen Faunengebietes.- R. Friedländer & Sohn, Berlin, 368 pp.

VITEK, E., MRKVICKA, A.CH., ADLER, W., HORAK, E., FLECK, W. & HASLEHNER, B. 2004: Wiens Pflanzenwelt.- Verlag des Naturhistorischen Museums Wien, 367 pp.

## Authors:

Mag.Dr. Martin Lödl, Naturhistorisches Museum Wien, Entomology Department, Burgring 7, 1010 Wien, Austria. e-mail: martin.loedl@nhm-wien.ac.at

Mag.Dr. Sabine Gaal-Haszler, Naturhistorisches Museum Wien, Entomology Department, Burgring 7, 1010 Wien, Austria. e-mail: sabine.gaal@nhm-wien.ac.at

Mag.Dr. Stefanie Jovanovic-Kruspel, Naturhistorisches Museum Wien, Entomology Department, Burgring 7, 1010 Wien, Austria. e-mail: stefanie.jovanovic@nhm-wien.ac.at