(Fig. 13); éperon plus allongé, à côtés peu convergents; Afrique (+ 1 ♀ de Taïwan).

*fuscopleuralis*

- **pleure brillante mais avec une plage cannelée au sommet et une jouxtant $H_3$; tête** brun foncé, **pas franchement noire**, mais plus sombre que les autres tagmes qui ne sont toutefois pas brun clair ou jaune roussâtre, mais bruns (cependant la périphérie du scutellum - à un niveau bien inférieur - et la base du grand tergite $T_3$ peuvent être plus pâles); la méso-métapleure n'est pas plus sombre que le reste du mésosoma; éperon médian grêle et long; scape plus ou moins clair, le reste de l'antenne (Fig. 11) très sombre; Asie

*besucheti*

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# Leafminers (Diptera; Agromyzidae) new to the Belgian fauna

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**Abstract**

*From 1991 till 1993 leafmines were collected at different localities in Belgium. Twelve Agromyzid species were reared. Six species are new to the Belgian fauna.*

**Samenvatting**

*Van 1991 tot 1993 werden in verschillende localiteiten in België bladmijnen verzameld. Twaalf soorten Agromyzidae werden uitgekweekt. Zes soorten zijn nieuw voor de Belgische fauna.*

## Introduction

All Agromyzidae are phytophagous. The larvae can be found in almost all kinds of plant parts: stems, roots, leaves, cambium of young trees or the inflorescence. However, most larvae are leafminers (SPENCER, 1990).

Agromyzidae can easily be collected by general sweeping. A more interesting collecting method involves searching for larval leafmines or puparia in stems and rearing of the larvae. In this way identification is greatly facilitated because additional diagnostic characters such as the host, mine and pupal characters are available (SPENCER, 1972; VON TSCHIRNHAUS, 1992). In addition, data on the parasitoid community of the Agromyzids can be collected.

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The larvae frequently form a characteristic feeding track or mine which may provide a reliable means of identification (HERING, 1935, 1936a,b, 1937a,b,c; HERING, 1951, 1957; SPENCER, 1972).

Important diagnostic characters are provided by shape and colour of the puparium and the way of pupation. Especially the morphology of the spiracles has great diagnostic value. In most species, pupation takes place outside the mine. The larva pupates immediately on leaving the mine and falls to the ground. In a few cases the larva leaves the mine, pupates and the puparium is glued on the leaf surface. Pupation can also take place inside the mine with or without the spiracles projecting through the leaf surface (SPENCER, 1972).

## Material and Methods

Mined leaves were collected from 1991 till 1993 at different localities in Belgium. Leafmines containing larvae were kept in sealed plastic bags until the larvae pupated. The pupae were kept in a glass tube with a moistened slip of paper to prevent desiccation. After pupation empty leafmines were dried and preserved.

To identify the reared flies we used the following keys: GRIFFITHS (1963), SPENCER (1972) and (1976), and NOWAKOWSKI (1973).

The identified Agromyzidae are stored in the authors collection at the University of Antwerp (RUCA). Later they will be deposited at the Royal Belgian Institute of Natural Sciences, Brussels.

## Results

Twelve Agromyzid species were identified. Six species are new to the Belgian fauna. The species new to the Belgian fauna are discussed below. The dates mentioned refer to the collection dates. Additional information about host plants, mining patterns and pupal features are given. Six reared species were already recorded from Belgium, they are listed in Table 1.

### *Cerodontha (Poemyza) beigerae* NOWAKOWSKI, 1972

Material: Halle (FS.17), 26.VI.1993, 3♂♂ + 1♀, *Calamagrostis canescens* (WEBER) ROTH.

Host: *Calamagrostis canescens* is considered to be the most favourite host plant. Other hosts are *Calamagrostis arundinacea* (L.) ROTH, *Calamagrostis villosa* (CHAIX) GMEL. and *Agrostis canina* L. (NOWAKOWSKI, 1973; SPENCER, 1990).

This species has previously been recorded from Polen, Germany (BRD and DDR), Hungary and the eastern part of Russia (NOWAKOWSKI, 1973; PAPP, 1984).



Table 1.

| | |
|---|---|
| *Agromyza albipennis* MEIGEN | Wuustwezel, 31.V.93, 2♂+3♀, *Phalaris arundinacea* L. |
| *Chromatomyia horticola* (GOUREAU) | Wilrijk, 22.V.93, 2♂, *Impatiens parviflora* DC. |
| | Wilrijk, 03.VI.93, 3♂, *Sonchus* sp. |
| *Chromatomyia syngenesiae* (HARDY) | Antwerpen, 24.V.93, 1♂, *Sonchus* sp. |
| | Wilrijk, 03.VI.93, 5♂, *Sonchus* sp. |
| *Phytomyza aquilegiae* HARDY | Deurne, 2.VI.93, 1♀, *Aquilegia* sp. |
| *Phytomyza conyzae* HENDEL | Wilrijk, 8.V.93, 1♂+2♀, *Pulicaria dysenterica* (L.) BERNH. |
| *Phytomyza eupatorii* HENDEL | Hoboken, 20.VI.93, 1♀, *Eupatorium cannabinum* L. |

### *Paraphytomyza populi* (KALTENBACH, 1864)

Material: Oostduinkerke (DS.76), 19.IX.1993, 7♂♂ + 2♀♀, *Populus gileadensis* ROULEAU.

Host: *Populus spp.* (SPENCER, 1990).

The larvae of *P. populi* form a long whitish-linear mine. The larvae of *Paraphytomyza populicola* (WALKER, 1853) also feed upon *Populus*, but they form blotch-mines which may be somewhat elongate but never linear. *P. populi* is recorded from most parts of western and central Europe (SPENCER, 1976).

### *Phytomyza artemisivora* SPENCER, 1971

Material: Malle (FS.18), 22.V.1993, 1♂, *Artemisia vulgaris* L.

Host: *Artemisia vulgaris* (SPENCER, 1990).

The larvae form a long, white linear mine, regularly adjoining a vein. The frass is deposited in separate grains (SPENCER, 1976). *P. artemisivora* lives widespread in Europe (SPENCER, 1990).

### *Phytomyza bipunctata* LOEW, 1858

Material: Zoersel (FS.18), 30.V.1993, 2♂♂ + 6♀♀, *Echinops* sp.

Host: Frequently found on various cultivated *Echinops* species. It is remarkable how quickly isolated plants in gardens are colonized (SPENCER, 1973). This record also comes from a private garden. The only plant present was largely infested. *Echinops* species are native in the Mediterranean area and the Balkan but *P. bipuncta* has never been found on wild plants (SPENCER, 1990).

The larvae form an irregular, narrow whitish mine. Many mines are formed in a single leaf. The frass is deposited in long, black stripes at alternate sides of the mine (HERING, 1936a; SPENCER, 1976). The larvae pupate outside the leave, the puparium is black.
*P. bipunctata* is local but widely distributed in Europe (SPENCER, 1976).

***Phytomyza plantaginis* Robineau-Desvoidy, 1851**

Material: Wilrijk (ES.97), 8.V.1993, 2♀♀, *P. lanceolata* L.

Host: *Plantago* sp., particularly *P. lanceolata* and *P. major* (L.) (Spencer, 1990).

The larvae of *P. plantaginis* form a narrow, linear mine, normally in the leaf but sometimes also in the stem. The larvae pupate in the leaf. The puparium is whitish (Hering, 1937a; Spencer, 1976, 1990). This species occurs commonly in Europe and has been introduced in the U.S.A., Australia and New Zealand (Spencer, 1990).

***Phytomyza spinaciae* Hendel, 1928**

Material: Wilrijk (ES.97), 6.V.1993, 1♂ + 1♀, *Cirsium arvense* (L.) Scop.; Zoersel, 30.V.1993, 3♂♂ + 3♀♀, *Cirsium oleraceum* (L.) Scop.

Host: Various *Cirsium* spp., also on *Carduus* spp., *Cnicus* spp. and *Serratula* spp. (Spencer, 1990).

This species forms distinctive greenish linear mines (Spencer, 1976). The larvae pupate in the mine, the puparium is white. *P. spinaciae* is widely distributed in Europe, except in the south (Spencer, 1976).

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