The exotic land planarian Artioposthia triangulata in the Faroe Islands: Colonisation and habitats

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Introduction

The land planarian *Artioposthia triangulata* (Dendy, 1894) from New Zealand is in the process of colonising certain European countries bordering the North Atlantic, in particular Northern Ireland, Scotland and, most recently, the Faroe Islands. This land planarian is recognisable by its flattened body which is purplish-brown in colour with dark-grey specks and translucent margin. When active and elongated it can be over 20 cm long, whereas when at rest it adopts a characteristic coiled position forming a flat spiral, usually surrounded by mucus. The land planarian produces conspicuous, shiny-black egg capsules (resembling crowberries) from which several cream coloured juveniles emerge. The occurrence of this exotic flatworm in the northern hemisphere is being associated with an absence of lumbricid earthworms.

The first record of *A. triangulata* outside New Zealand was in 1963 when it was discovered in gardens in the suburbs of Belfast, Northern Ireland (Anon, 1964). Nowadays, the land planarian has been recorded in every county in Northern Ireland (Willis and Edwards, 1977; Anderson, 1986; Blackshaw and Stewart, 1992). In Scotland, the planarian was first found in 1965 in the Royal Botanic Gardens, Edinburgh (Willis and Edwards, 1977), and is now becoming widespread, with reports from as far north as Stromness in the Orkney Islands down to the border with England (BRISC, 1992).

The earliest sighting of *A. triangulata* in the Faroe Islands appears to date back to 1982 when specimens of a strange flatworm were noticed in Tórshavn. The first verified observations were in 1990, specimens being found in the village of Kvívík, 30 km to the north-west of Tórshavn. Over the past two years, the flatworm (*flatmaðkur* in Faroese) has been recorded from several other localities in the Faroes (Bloch, 1992).

Introduction of the land planarian to

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northern hemisphere countries appears to have occurred by passive long-distance migration facilitated by the transport of plant material. For example, the most probable immigration routes for Northern Ireland and Scotland are via the import of daffodil bulbs (Willis and Edwards, 1977) or roses (Blackshaw and Stewart, 1992) from New Zealand, whereas the most likely route for the Faroes is via the import of potatoes or other plant material from Scotland (Bloch, 1992).

Initially the New Zealand flatworm was regarded as a curiosity, but owing to its apparent colonisation potential and predatory habit on earthworms it is now considered to pose a threat to earthworm populations and thereby soil fertility (Blackshaw, 1990; Mather and Christensen, 1991; Blackshaw and Stewart, 1992). At present, there are no known commercial control measures for the land planarian. The British authorities are now taking the matter seriously and have recently classified *A. triangulata* as a pest, adding it to the list of non-native species not allowed to be introduced into the wild. However, as the land planarian has not yet been recorded in continental Europe, countries such as Denmark have not considered any form of import control.

The *A. triangulata* situation in the Faroe Islands appears to be developing rapidly. In order to evaluate the current status of the land planarian, the authors conducted a sampling survey of the main island of Streymoy during the period 12th-17th November 1992.

Site observations

Four main sites on the island of Streymoy were investigated, the first three having previous records of *A. triangulata*:

- the Gundadalur plantation in the centre of Tórshavn
- a private garden in the village of Kaldbak
- potato fields in the village of Kvívík
- the arboretum in Tórshavn

1) *Gundadalur plantation*

The plantation in Tórshavn dates from 1885, and the planting of various non-native species of trees and shrubs from northern and southern hemisphere countries has taken place on several occasions since with varying degrees of success.

Examination of the plantation during November 1992 revealed specimens of *A. triangulata* in an area west of the river. Despite ground frost, adult and juvenile individuals and egg capsules (non-hatched and hatched) were readily found, but with patchy distribution, under stones and logs, and also beneath pieces of bark overlying moss. Most individuals appeared inactive, being in a coiled position and surrounded by mucus. Three to four adults/juveniles were usually found under logs or stones, and an area of 20 x 20 cm in the mossy habitat gave up to 15 non-hatched egg capsules. Earthworms and slugs were also observed in the same habitats as the land planarians.

2) *Garden in Kaldbak*

The village of Kaldbak lies about 12 km to the north of Tórshavn. Specimens of *A. triangulata* were first observed here in Autumn 1992 in a well-established, private garden containing several non-native plants. This plant material had been transplanted over the years from different Faroese locations, including local gardens and shops, a garden centre near Kirkjubøur (in 1991 and 1992) and the arboretum in Tórshavn (about 20 years ago, only Danish material being distributed at that time). Apparently, the land planarian has not yet been sighted in any of the other local gardens involved in the exchange of plants (B. Nysted, pers.comm).

Examination of the garden in November 1992 indicated that specimens of *A. triangulata* were present under many of the ornamentally arranged stones (each stone roughly 10 x 10 cm), with up to six coiled, inactive adults/juveniles per stone. Although flatworms were abundant, very few egg capsules were seen. Earthworms and other invertebrates (carabid larvae, earwigs and slugs) were also found under the garden stones.

3) *Potato fields in Kvívík*

Kvívík lies 30 km to the north-west of Tórshavn. This coastal village is surrounded by intensively managed infields used mainly for growing potatoes and hay harvest, sheep being allowed to graze the fields after the growing season. A local farmer had observed specimens of *A. triangulata* in numbers of hundreds in his potato field in May 1990, though none had been seen during potato planting in the same field the previous year (J.B. Jákobsen, pers.comm.). The farmer has since noted a lack of earthworms in his field and - well aware of the beneficial effects of earthworms on soils and their habit of aggregating in manure - has attempted to attract earthworms back to the area by putting out heaps of cow dung.

This particular field was examined in November 1992, over two years since the first sightings of *A. triangulata*. The field, now under grass (in 1991 and 1992), gave no sign of the land planarian. Furthermore, no earthworms nor their cocoons could be found, not even in or under the dung heaps.

However, approximately 100 m away from the field previously infested with *A. triangulata*, another field had been used for growing potatoes during 1992. This field, now at post-harvest stage, was examined by lifting the grass turves (see Fig. 1). Here, the land planarian was found in high densities, e.g. under a 50 x 30 cm turf the number was often as high as 10 adults/large juveniles and 30 egg capsules, half of these capsules having already hatched. Both active and coiled, inactive individuals were found, along with many mucus-lined resting sites. No earthworms nor their cocoons were evident, though other invertebrates were observed.

For comparison, two other potato fields (also post-harvest stage) on the outskirts of the village were studied, one of these belonging to the above farmer. These two fields contrasted greatly to the ones already examined in that many earthworms were immediately visible on the grass surface

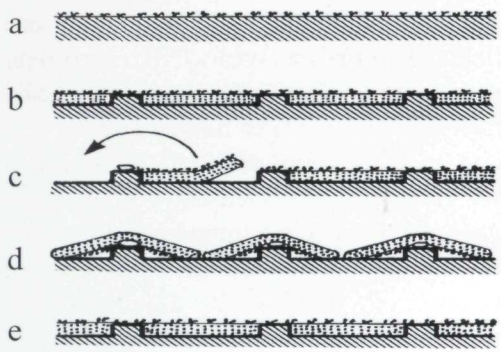

Figure legend

Figure 1. Faroese potato fields as an ideal habitat for earthworms and the predator land planarian *A. triangulata*

The special *reimavelta* technique involves the following sequence: (a) the intact grass sward in the infield; (b) the grass sward is cut into alternate narrow and wide strips of turf; (c) seed potatoes plus a little fertiliser are placed on top of the narrow strip of turf; d) the wide strip of turf is cut free and folded over the adjacent narrow strip, so covering the potatoes during the growing season; (e) after harvest, the turves are returned to their former position so re-establishing the grass sward. (After Joensen, 1980). Stages (d) and (e) promote favourable habitat conditions for high density populations of earthworms and subsequently *A. triangulata*.

beneath the turves (>50 individuals per turf on average), including several species such as *Dendrodrilus rubidus*, *Dendrobaena octaedra*, *Lumbricus rubellus* and *Aporrectodea caliginosa*. Also obvious were the entrance holes of numerous earthworm burrows. There was no sign of the land planarian.

The pattern emerging for those potato fields examined was clear and consistent: when land planarians were present, earthworms were absent, and visa versa.

4) *The arboretum in Tórshavn*

The arboretum in Tórshavn obtained its present site in 1977, the conservator's garden nearby being used prior to this for the cultivation of plant material originating from various countries in both the northern and southern hemispheres (T.G. Leivsson, pers.comm.). There had been no previous reports of the land planarian at the arboretum.

A search of the area in November 1992, however, revealed several egg capsules in the north-eastern corner of the arboretum, though there was no sign of the planarian in the nursery area. The egg capsules were found under stones which were the remains of a stone wall surrounding an old, well-established garden with non-native plants. Earthworms and other soil invertebrates were also observed in the arboretum.

Laboratory observations

During sampling, it was noted that many inactive individuals of *A. triangulata* became active when disturbed. In the laboratory, the land planarians were observed to move rapidly when held in large plastic containers; crawling activity incorporated a characteristic lifting with a sideways movement of the anterior end.

Examination of random samples of egg capsules revealed different stages of development per sampling site, egg capsule contents ranging from a milky fluid to developed juveniles. It was also observed that several egg capsules hatched within 24 hours at room temperature. Dissection of a random selection of egg capsules (repre-

senting all four sampling sites) gave an average of 8 (maximum 11) juveniles per capsule, the newly emerged planarians being cream coloured and up to 10 mm in length when elongated.

Discussion

An attempt has been made to gather information which may elucidate possible routes of migration for *A. triangulata* both to and within the Faroe Islands, and factors underlying the obvious success of the land planarian in these North Atlantic islands.

It appears that *A. triangulata* has been colonising the Faroes for at least a decade. The first sighting, back in 1982, was when specimens were noticed in the downpipes of the local Parliament building in Tórshavn, the roof of which is covered with grass turf (Bloch, 1992). This roofing turf comes from the outskirts of the city, and was collected in 1978 from a site in an area where army barracks for British soldiers had been constructed during the Second World War (T.G. Leivsson, pers.comm.). The next probable sighting of the land planarian, in 1987, was when poorly preserved specimens originating from potato fields on the outskirts of Tórshavn were brought to the museum. After the dramatic find of hundreds of specimens in the potato field at Kvívík in 1990, and the broadcasting of the matter in 1991, the public has become well acquainted with the exotic New Zealand flatworm and this has resulted in a steady flow of reports from gardens, churchyards, potato fields, etc. on several of the islands (Bloch, pers.comm.).

In New Zealand, *A. triangulata* is usually found under objects lying undisturbed on the soil surface for some time, and often in association with woodlice, slugs and centipedes (Fyfe, 1937). A similar pattern of habitat selection and fauna association is evident for the Faroe Islands.

Possible routes of passive migration

From discussions with the islanders it becomes obvious that there are, and have been, many possibilities for the import of plant material (often with soil) and thereby for the passive migration of the land planarian to the Faroes, both directly from New Zealand and indirectly via other countries, especially Scotland.

- Faroese fishermen have a long tradition of returning home with goods from abroad, such as vegetables (e.g. potatoes) and other plant material (e.g. ornamental plants), as well as livestock (e.g. sheep) from the British Isles, in particular the Scottish mainland.

- For many years regular cargo ships with loads from various countries, particularly Denmark, Scotland and Western Norway, have transported goods to the Faroes. For example, potted plants and seed potatoes from Scotland and Denmark have been widely distributed in the Faroes.

- During the Second World War, there was considerable non-con-

trolled import of goods from abroad. Many supply ships came from Scotland, though some came from as far away as New Zealand and South America, delivering vegetables, meat and other produce to Tórshavn.

- Since 1976 there has been a regular summer ferry service between the Faroes and Shetland/Scotland, so allowing the possibility of tourists returning to the Faroes with plant material (c.f. Bloch, 1992).

- Introduction of plant material from both northern and southern hemisphere countries has been initiated by the Nordic arboreta. In particular, material originating from a Nordic arboretum expedition to New Zealand/Tasmania/Australia in 1974/75 has been introduced (albeit indirectly) to the Faroes and subsequently distributed.

Each of the above points remains as a contender for the immigration route for *A. triangulata*, and it is clearly possible that specimens of the land planarian (adults, juveniles or egg capsules) may have been accidentally introduced to the Faroes on more than one occasion in the past, directly and/or indirectly from New Zealand. Furthermore, it is highly likely that the land planarian had already reached the islands some years prior to the first sighting in 1982, particularly as specimens are easily overlooked by the inexperienced eye.

Since land planarians in general are prone to desiccation (Ball and Reynoldson, 1981), and as *A. triangulata* is very susceptible to mechanical damage (Willis and Edwards, 1977) and temperatures above 20° C which are lethal (Blackshaw and Stewart, 1992), ideal media for the transport of the land planarian are cool, moist soil and moss. Thus, potted plants and plants with root-systems bound in moss which are transported under cool storage conditions seem excellent vehicles for the long-distance passive migration of these soil organisms. Also possible is the transport of land planarians with freshly harvested potatoes or other root crops, and smaller juveniles may be able to find refuge within the outermost scales of plant bulbs (Willis and Edwards, 1977), or between the outer foliage of certain vegetables (e.g. cabbage).

Adaptation to Faroese conditions

With regard to an understanding of the land planarian's apparent success in the Faroe Islands, it is perhaps worthwhile to consider how well plant material from New Zealand has adapted to Faroese conditions.

The plant material originating from the Nordic arboretum expedition to New Zealand/Tasmania/Australia in 1974/75 was first propagated in arboreta at Hørsholm, near Copenhagen in Denmark, and at Milde, near Bergen in Norway, after which material was sent to the Faroes (Ødum, 1989). As the present-day arboretum was not yet established, the material was planted in the conservator's garden in Tórshavn

in 1976/77 from where it was further distributed, e.g. to the present arboretum in 1978/79 and from there to the Gundadalur plantation in 1980's (T.G. Leivsson, pers.comm.). Many of the plant species collected during the expedition to New Zealand/Tasmania/Australia in 1974/75 (as well as species collected during expeditions to southern South America in 1975 and 1979) have survived in Tórshavn and appear to have adjusted well to Faroese conditions - especially so when compared with the performance of plant material at Hørsholm and Milde (Søndergaard, 1989). Thus, it may be expected that those Faroese conditions favouring the survival of New Zealand plant material have likewise favoured the survival of the land planarian after its introduction.

Although the plant material originating from New Zealand provides a possible means for the passive immigration of *A. triangulata*, this particular route seems less likely as the material came to the islands indirectly. Moreover, subsequent examination (also in November 1992) of the Danish arboretum at Hørsholm where the New Zealand plant material was originally propagated (as well as the forest botanic garden at Charlottenlund, Denmark, where some of the New Zealand material was transplanted) did not give any indication of the land planarian. Nor are there any known sightings of the land planarian at the Norwegian arboretum at Milde.

Even so, although *A. triangulata* has not yet been recorded in either Denmark or Norway this does not exclude the possibility that the land planarian has reached these countries via the arboreta at some stage previously but prevailing conditions have not allowed the species to colonise there. With regard to the New Zealand plant material, survival has been far better at Tórshavn than at Hørsholm or Milde, these differences in survival being best explained by milder winters and shorter periods of continuous frost at Tórshavn compared with the other two localities (Søndergaard, 1989). Furthermore, the winters of 1981/82 and 1984/85 were among the coldest in Denmark since 1900 (Rosenørn, 1986), and those of 1978/79 and 1985/86 among the coldest in West-Norway since the turn of the century (Hjellestad, 1985) with the soil frozen to a depth of more than one metre at the Norwegian arboretum (Søndergaard, 1989). Thus, if *A. triangulata* had been transported to Hørsholm or Milde with plant material in 1974/75, it is unlikely that the land planarian could have survived the aforementioned extreme climatic conditions that have occurred in Scandinavia since. However, the possibility remains that during the initial phase of plant propagation and re-distribution, Hørsholm and/or Milde could have provided temporary habitats for the land planarian and therefore acted as stepping stones to the Faroe Islands.

Faroese potato fields as an ideal habitat

The potato fields in Kvívík were notable in that either high densities of earthworms (>200 m^{-2}) or high densities of *A. triangulata* (approx. 40 adults/large juveniles plus 60 full egg capsules m^{-2}) were found.

Evidently, Faroese potato fields provide a special kind of habitat which allows the build-up of populations of these soil invertebrates.

Potato cultivation in the Faroe Islands incorporates a special technique ("*reimavelta*"), first introduced in 1925, which allows farmers to grow potatoes even in infields with a relatively thin layer of soil (Joensen, 1980, 1987). The technique involves cutting the grass sward into alternate narrow and wide strips; the narrow strip of turf is left in place and seed potatoes plus a little fertiliser are placed on top, whereas the wide strip of turf is cut free in conveniently sized pieces (approx. 50 x 30 cm) and folded over the adjacent narrow strip so covering the potatoes (Fig. 1). After potato harvest, the turves are returned to their former position.

The *reimavelta* technique thus creates a particularly favourable habitat for earthworms since a rich food supply (decomposing grass material and associated microorganisms) and moist shelter exist under the turf mosaic. Such conditions promote the build-up of an earthworm population with a high density, biomass, and species diversity. This, in turn, makes the potato field an attractive habitat (virtually a "larder") for an earthworm predator such as *A. triangulata* which has been accidentally introduced into the area, with a rapid growth of the predator population to follow. Thus, it is evident that in situations where a food supply is readily available, the introduction of *A. triangulata* can have a dramatic impact on the earthworm population, and consequently on soil structure, drainage and fertility.

The situation in the Kvívík potato fields highlights important aspects regarding the *A. triangulata*/earthworm interaction in cultivated infields in the Faroes; (a) once introduced to an area, the land planarian population can build up to high densities within a year; (b) a high planarian density brings about the decline and eventual disappearance of the local earthworm population; (c) a diminishing food supply promotes colonisation of adjacent areas where food is more abundant; (d) depletion of the food supply in the original area eventually brings about a collapse of the planarian population; (e) the area previously infested with the planarian requires several years for the earthworm population to re-establish, assuming that colonisation of earthworms from adjacent areas is possible.

The question remains as to how *A. triangulata* came to be in the potato fields in Kvívík in the first place. The farmer whose field was infested in 1990 claimed that his seed potatoes were his own produce, though some neighbouring farmers obtained their seed potatoes from outside the village, for example from Scotland and Denmark. Introduction of the land planarian via potatoes from these countries, however, seems less likely as the flatworm is rarely found in agricultural fields in Scotland (e.g. in a survey of randomly selected farms, only 1 in 351 farms sampled so far had the planarian present; BRISC, 1992) and it has not been recorded from Danish farmland. Introduction via garden plant material is more likely and,

indeed, a nearby garden was found to be infested.

Once the land planarian had arrived in Kvívík, however, its spread could have occurred by both active migration (crawling) and passive migration (e.g. with exchanged crop produce and garden plants, with run-off water trickling down the sloping infields, and with the hooves of livestock wandering across infields after the growing season). Its obvious colonisation success in Kvívík is undoubtedly related to the special conditions existing in the potato fields whereby a concentrated supply of earthworms occurs beneath the grass turves.

In contrast to cultivated areas such as potato fields, less fertile land tends to have only sparse earthworm populations. In the Faroe Islands, for example, outfields have poorer soils and a lower density of earthworms than the enriched infields (Enckell and Rundgren, 1983). These areas probably represent sub-optimal habitats for *A. triangulata* but may well be able to sustain low density populations of the land planarian.

Concluding remarks

In Scotland and Northern Ireland, *A. triangulata* is found most commonly in gardens and other cultivated areas. Similarly, most records of the land planarian in the Faroe Islands come from these types of habitat. For all three countries, although widespread, the species is by no means ubiquitous.

Cultivated areas in the Faroes, such as infields and gardens, are often characterised by a relatively rich earthworm fauna plus the input of foreign plant material. These areas are therefore considered to be primary sites for the land planarian's introduction, population growth and subsequent colonisation of new areas by both active and passive migration. However, as habitat suitability is related to food availability, the land planarian population can only be maintained at these sites as long as an adequate supply of food remains, though survival without feeding maybe possible for some months. A lowering of habitat suitability due to food depletion appears to induce emigration and thereby colonisation of surrounding areas.

Less fertile land, such as outfields, may prove to be important secondary sites in relation to the land planarian's survival, as these areas may be able to support low density reservoir populations which can recolonise adjacent infields and gardens once earthworm populations begin to re-establish after having been depleted earlier on in the predator/prey interaction.

Certain habitats in the Faroes, such as potato fields, are remarkable in having very high densities of the land planarian and a concomitant lack of earthworms. As infields are important for the cultivation of crops, and as earthworms have a beneficial effect on soil structure and fertility, we consider that the potential threat to the earthworm fauna in such habitats should be taken seriously.

All signs indicate that the distribution of *A. triangulata* is expanding, and there is growing concern that the land planarian may eventually spread throughout northern

Europe. It appears that the exchange of plant material within and between countries due to horticultural and agricultural trade facilitates and enhances the colonisation process.

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Úrtak

Ný Selendski flatmaðkurin *Artioposthia triangulata* nemur í løtuni land í fleiri

europeiskum londum í norðuratlantsøkinum, serstakliga í Norður-Írlandi, Skotlandi og síðst í Føroyum. At hesin flatmaðkurin úr heitum, fjarskotnum londum er komin til norðaru hálvuna verður tengt saman við, at reyðmaðkurin trýtur.

Eyðkenni hjá hesum flatmaðki er ein flatur, brúnligur kroppur við dimmum blettum. Allur kroppurin er ljósrandaður. Er flatmaðkurin virkin, kann hann verða upp í 20 cm langur. Hvílir hann harafturímóti, ballar hann seg í ein eyðkendan snyril, sum vanliga er slýggjutur. Flatmaðkurin verpur sjónlig, svartskyggjandi egg (lík vanligum berum í haganum). Úr teimum klekjast rómalittar unglingaverur.

A. triangulata varð helst fyrstu ferð funnin í Føroyum í 1982; tó varð ikki við vissu rakt við hann fyrr enn í Kvívík í 1990. Hesi seinastu tvey árini hava vit funnið flatmaðkin ymsa staðni í Føroyum, í urtagørðum, kirkjugørðum og í eplaveltum. Av tí at støðan í Føroyum tykist hava tikið dik á seg, vórðu ein røð av royndum tiknar á Streymoynni heystið 1992. Fýra støð vórðu kannað, nevniliga viðarlundin í Havnini, ein urtagarður í Kaldbak, eplaveltur í Kvívík og grasafrøðigarðurin í Havn; alla staðni varð flatmaðkurin funnin.

Møguleikarnir at flyta inn plantutilfar (við mold uppií) eru og hava verið nógvir. Á henda hátt hevur borið til at flutt tann óvirkna flatmaðkin til Føroya, bæði úr Ný Selandi og óbeinleiðis um onnur lond, serstakliga um Skotland. Fyrst og fremst veðurlagið man gera, at flatmaðkurin tykist trívast væl í Føroyum - lýggir vetrar uttan long tíðarskeið við frosti.

Tað, sum vanliga eyðkennir velt lendi í Føroyum, eitt nú innangarðs og í urtagørðum, er lutfalsliga ríkt reyðmaðkalív og tað, at fremmant plantutilfar ofta verður drigið inn á tey. Tí verða hesi økir mett at vera tey støðini, sum fyrst av øllum hava tikið ímóti flatmaðkinum, nørt um stovnin, sum síðani hevur nomið nýtt lendi, bæði við at hann sjálvur er farin hagar, og við at hann hevur verið fluttur hagar. Flatmaðkastovnurin kann kortini bert lívbjarga sær á hesum støðum, so leingi sum nóg mikið av føði er til; men hann kann helst vera føði fyriuttan í nógvar mánaðir. Tá ið føðin er uppi, fer hann sostatt at enda at leita sær upp nýggj økir. Kargari lendi, eitt nú uttangarðs, kunnu vísa seg at fara at vera týdningarmikil framíhjáøkir, tá ið ræður um at hóra undan hjá flatmaðkinum, tí hesi lendi kunnu vera heimstaður hjá einum eykastovni av flatmaðki, sum kann nema land av nýggjum innangarðs og í urtagørðum, so títt og knapt sum reyðmaðkastovnurin aftur tekur at mennast, eftir at hann hevur verið týndur í ránsdjóra/býtisdjóra-samspælinum.

Eitt, sum eyðkennir ávís støð í Føroyum t.d. eplaveltur, er, at har er ríviligt til av flatmaðkinum, samstundis sum reyðmaðkurin trýtur. Hin føroyska reimaveltan er serliga góður bústaður hjá reyðmaðkinum, tí undir fløgunum er ov mikið til av føði (grasflag og tøð) og har er slevjut. Sostatt er eplaveltan væl umtóktur tilhaldsstaður hjá reyðmaðkaránsdjórinum *A. triangulata*. Av tí at innangarðslendi er týdningarmikið at velta í, og av tí at reyðmaðkurin er gagnvera, tá ið ræður um at varðveita vondina í moldini og vætuna har, tykist okkum, at tað eigur at vera tikið í álvara, at reyðmaðkurin

verður so álvarsliga hóttur á hesum búplássum.

Mangt bendir á, at *A. triangulata* spjaðist alt meira. Og ampin veksur um, at flatmaðkurin at enda fer at vera at finna um alt Norður-Europa. Eyðsýnt er, at tað, at plantutilfar í sambandi við landbúnað og urtagarðsvirksemi verður flutt innanlendis og landanna millum, lættir um og økir landnámið.

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