

List of changes, deletions and corrections.

Reply to referees

P. 5, line 14. After "of genets." add a new sentence: "The AFLP analyses of the collected material shows, however, that no genetically identical individuals were recorded in our samplings (Kesara Ananthawat-Jónsson, pers. com.)".

P. 5, line 23: delete "had the opportunity to"

P. 5, line 23: change "spend" to "spent"

P. 5, line 26: change "cohortes" to "cohorts"

P. 7, line 5: change ">" to "<"

P. 7, line 17: change "weakly significant" to "non-significant"

P. 7, line 19: change "The number" to "The mean number"

P. 7, line 20: delete "This figure was not different"

P. 7, line 21: change "11.31" to "11.3"

P. 7, line 22: change "12" to "13"

P. 8, line 9: delete: "is equal on average"

P. 8, line 11: change "ranging" to "ranking"

P. 10, line 17: Insert reference after Sánchez-Vilas and Retuerto 2009 "Sanchez-Vilas et al. 2012"

P. 10, line 20: change "cohortes" to "cohorts"

P. 10, line 23: change ">" to "<"

P. 10, line 25: change "We conclude" to "We conclude based on indirect evidence"

P. 14, line 23: change "all" to "probably all"

P. 15, line 15: change "80ies" to "80s"

P. 15, line 20: delete "a"

P. 16, line 3: change "becomes" to "grows"

P. 16, line 3: change "becomes" to "become"

P. 17, line 22: delete "1968,"

P. 17, line 23: change "2000" to "1968"

P. 18, line 27: Insert reference: Sanchez-Vilas, J., Bermúdez, R. and Retuerto, R.: Soil water content and patterns of allocation to below- and above-ground biomass in the sexes of the subdioecious plant *Honckenya peploides*, Ann. Bot. London 110: 839-849, doi: 10.1093/aob/mcs157, 2012.

P. 20, Table 1: change "Iceland" to "mainland Iceland"

P. 20, Table 1: add after "sample." : "For the populations HA, HB and IG the sample areas were of irregular shapes or fragmented, so it was not possible to obtain a reliable measure of density or distance between individuals."

P. 20, Table 1: change "0.40" to "0.46"

Reply to referee #1

Thank you for your helpful comments.

P. 5, line 23: We would like to keep this sentence to emphasize the very short period and the year of sampling. We have, however, left out part of the sentence.

We have added text to Table 1 to clarify the properties of the localities: For the populations HA, HB and IG the sample areas were of irregular shapes or fragmented, so it was not possible to obtain a reliable measure of density or distance between individuals. We also changed "Iceland" to "mainland Iceland".

In table 1 there was a typing error. The ratio 0.40 should have been 0.46, and is now corrected.

We have also followed all your suggestions in the "specific comment" sections.

Reply to referee #3

Thank you for your helpful comments

Most of the comments are on the possibility of identifying one individual. We agree that on a sandy beach with wave erosion and other disturbances it may be difficult to identify individuals of *H. peploides*, but on Surtsey the conditions are quite different. Except for wind erosion there are hardly any disturbance that may break up individuals and in all our plots the individuals are well spaced from each other and without other species amongst them (except the one in the gull colony) - so it is as easy and unproblematic to identify, count, and measure individuals as tree trunks in a forest.

We have never observed or read reports that disrupted fragments of *H.* could act as dispersal elements. Again, we believe that in this respect the species is much more similar to trees than to rhizomatous grasses – if a branch breaks off it will most likely simply die.

With respect to marking of individuals it was started around 1970 and the emergent seedling and juvenile plants had a numbered wooden stick (around 50 cm high) placed in the soil beside them. Many of these sticks are still extant – in many cases the plant has disappeared but in the case of the plants we sampled there was no doubt which plants belonged to which stick.

In many of the Surtsey Reports there are good pictures verifying the appearance of *Honckenya* on Surtsey

P. 10653, line 17: Change "weakly significant" to "non-significant"

P. 10653, line 22: Change "12" to "13"

P. 10656, line 7: Insert reference after Sánchez-Vilas and Retuerto 2009: Sánchez-Vilas et al. 2012. The full reference is: Sánchez-Vilas, J., Bermúdez, R. and Retuerto, R.: Soil water content and patterns of allocation to below- and above-ground biomass in the sexes of the subdioecious plant *Honckenya peploides*, *Annals of Botany* 110: 839-849, doi: 10.1093/aob/mcs157, 2012.

P. 10656, line 25: Insert after "We conclude" "based on indirect evidence"

Reply to R. Retuerto Franco

Thank you for your comments.

We were during our sampling highly aware of the problem of clonality of *Honckenya*, as we know the interesting paper on several genets included in unisexual clones by you and your colleagues.

We are happy to be informed that *H. peploides* is able to establish from branch fragments.

However we still find it unlikely that spread by means of fragments on Surtsey plays any significant role.

It is true that Surtsey undergoes rapid erosion but it is mainly from the Southwestern side and it is the lava fields that are broken down. Few *Honckenya* plants grow in these fields. Furthermore most of our samples are not from beaches – all except one are from sites that are never reached by sea water.

The spread within the island must be by wind or surface water movements. As stated in the text we observed seedling beds along temporary streams and ponds and seedlings were actually numerous everywhere. So seed production, germination, and dispersal happen to a degree that is sufficient for the colonization of the entire island.

As mentioned and depicted in fig. 1, the colonization happened in waves that correspond well to a juvenile stage of 4 years the mature stage before the fruiting stage. We suppose that if fragments contributed significantly to dispersal and establishment of the species we would not see the pulses that have been shown.

We have consulted our colleagues in Iceland who have used AFLP techniques on our samples concerning the specific individual sampled by us. They did not find any genetically identical individuals among our samples. So we maintain our conviction that our samples from Surtsey (and from the other localities) are "real individuals". We have included a sentence referring to this in the paper.