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Opinion about the habilitation proposition of Dr Szymon Konwerski

General remarks

Since 1994 Dr Szymon Konwerski is based at Adam Mickiewicz University in Poznan, currently as a custodian (chief specialist) in the Faculty Museum. In 2002 he received the doctoral degree with a work on the faunistics of Curculionidae. Currently he works as a specialist in insect taxonomy and biology centered around beetle faunistics and beetle – mite phoretic interactions, centered around Tenebrionidae.

To date he authored or co-authored 24 publications in international journals (22 after his PhD). These received 622 citations (Scopus: retrieved 20.05.2021; without auto-citations) resulting in a Hirsch index of 10. Compared to other recent habilitations in the field of ecology this H-index is high. His Google Scholar citations achieved a value of 1648 (retrieved 20.05.2021). Therefore, the Google Scholar to Scopus quotient is 2.65, a comparatively high outreach outside of the strict academic community. This is a positive aspect of the present application.

Most cited (> 50 citations) are six papers on insect succession and carrion decomposition in the field of forensic entomology. In these papers Dr Konwerski served as co-author responsible for insect identification and analysis of dominances. I wondered why Dr Konwerski did not develop this field further. Of course, insect succession had been a popular

field in the 1980th and 1990th. Nevertheless, with modern analytical methods and networks approaches we might get many new insights into the assembly of communities and co-evolutionary processes, not to mention applied forensic aspects.

In only three of the international publications Dr Konwerski served as main author. These appeared during the last four years and received eight citations. In addition to the work in international journals Dr Konwerski published more than 100 papers mainly on the faunistics and conservation of various beetle species. Most of this work appeared during the last 20 years, after his PhD. Given his long stay in science the citation output is not overwhelming but at the lower end of what can be accepted for a successful habilitation. The high output of publications for the local audience and authorities demonstrates the main interests of Dr Konwerski, applied entomology and the accumulation of basic information and data on insect distributions and abundances. This is a stronger aspect of the application. I note that the number of field entomologists and taxonomists with broad knowledge and experience is constantly decreasing. There is a need to turn back this tendency. I appreciate the activities of Dr Konwerski in this field.

Dr Konwerski had several short-term internships at the Australian National Insect Collection (2007), and at Universities in Sweden and Turkey (2009-2011). The self-report also mentions cooperation with universities in Slovakia, Great Britain, and Italy, as well as 22 international conferences. I was surprised to see that these activities and internships did not spark any international cooperation. Only few of his publications have foreign co-authors. Apparently, Dr Konwerski is not really embedded in international scientific networks. This conclusion is also corroborated by the low number of reviews for international journals (nine during 20 years in science). The regard weak journals (including mdpi journals). These facts are particularly surprising in the field of taxonomy and bio-conservation. It is clearly a weaker point of his application.

According to his CV Dr Konwerski did neither serve as PI nor as participant of any external scientific grant. Two of his publications mention funding by the Canadian Forest Service to co-author Prof. Gutowski. Dr Konwerski himself only served a participant in diversity monitoring projects funded by local authorities. The application is silent about the financing of the stay in Australia although I guess that he received funding.

I have to say that I do not know Dr Konwerski personally. I did not contact the authorities of his Institute for additional background information. Therefore, my opinion is solely based on the material sent to me and on common scientific data bases.

Publications linked to the application

This proposition is titled ‘stabilność i selektywność związków foretycznych pomiędzy Uropodina i Ceramycidae w warunkach lasu naturalnego’ and is based on four papers published between 2016 and 2020. In three of these papers Dr Konwerski served as lead author. The journals, in which these papers appeared, are lower ranking with impact factors below 1.5. The total impact factor sums up to 4.22. In my opinion his is a low value for a habilitation application under current standards. The respective publications received (22.05.2021) eight citations according to Scopus indicating the rather low outreach of these studies. They are directed to a narrow group of specialists. A recent 2021 Ecology and Evolution paper with Dr Konwerski being one of the co-authors is not part of the achievement but has the chance of being recognized.

The field of Dr Konwerski, beetle faunistics and beetle phoretic mite interactions, is narrow. The four papers of the achievement mainly describe the phoretic relationships between Uropodina mites and some species of longhorn beetles. None of them is based on deeper ecological or evolutionary reasoning. From a technical point of view these papers are sound and well presented. It is not my part to re-review them again. I have to assess whether they form a scientific unit and help to solve a more general problem. Clearly they are thematically related as dealing with the same pattern of phoresy.

However, after reading I wondered about the real contribution to science. Simple descriptions do not solve scientific problems. The papers are also not embedded in theoretical reasoning. They rather contribute to existing knowledge about phoretic relationships and show that these are comparably stable in time and with respect to the interaction network. This might be an interesting finding if properly put into context. It is a pity that Dr Konwerski did not analyze the dynamics of these networks including other host species. Such networks have been intensively studied with respect to pollination and seed dispersion, as well as trophic and successional relationships. Phoresy might be an interesting new system to look at stability and constraints in an ecological and evolutionary context. In his autoreferat Dr Konwerski writes that he had more than 5000 beetles and more than 25000 deutonymphs as source material.

This might have been the basis for a complex network analysis including molecular studies. Further, phoresy is an intermediate stage towards parasitism. This might have been a starting point to look at evolutionary trends. For instance, is the fact that in some beetle species only one phoretic mite was found a shadow of the 'ghost of competition past'? In his autoreferat Dr Konwerski writes that saprophylic beetle – phoretic mite relationships are largely unknown and explicitly refers to evolutionary processes. So why didn't he study them? Finally, why is it interesting to know where the mite is attached. Does this have any adaptive interpretation? The papers and the autoreferat are silent about this point. I hope Dr Konwerski tries to shift his interest in this direction.

The four papers have between three and six authors. The author declarations are simple and largely identical standard formulas from which true contributions are hard to assess. CRediT information is not available in this case. Nevertheless, after analyzing the contents I think that in three of the four papers Dr Konwerski has indeed the highest contribution.

In conclusion, I was not fully convinced by these four paper. The rich material clearly allows for more than simple entomological descriptions. The series of four papers does not really solve a new scientific problem but is largely confirmative. In the light of current Polish habilitation standards, they are at the very lower limit for a successful application.

Other scientific and popular activities

Dr Konwerski has published a large number of faunistic and entomological work, particularly in forensic and applied entomology. Frequently he writes entomological, forensic and conservation opinions. This work appeared in local Polish scientific and popular scientific journals but nevertheless is of regional importance for instance in assessing conservational values and in landscape planning. Nearly all of these publications appeared after the PhD. Generally, Dr Konwerski served as co-author, probably he verified identification and assessed conservation values. This activity testifies that he is an established and well-known expert in beetle taxonomy and biological conservation. I missed taxonomic reviews and descriptions of new taxa. Faunistics itself is not science. Nevertheless, I regard these activities as being a stronger aspect of this application.

Science needs appropriate toolboxes. In his work Dr Konwerski applies standard and rather old fashioned methods, light microscopy and identification keys. I missed newer taxonomic

tools and laboratory approaches, not to mention molecular, experimental and modelling techniques. This is surprising and a weak aspect of the present application.

Attention deserves his activity in forensic entomology. He co-authored a number of papers and several presentations at European forensic conferences. He also conducted several forensic expertise. This is an important activity but, unfortunately, remained at a pure descriptive and conformational stage that cannot serve as a contribution to a scientific degree as is the habilitation. Again I got the impression that Dr Konwerski mainly served as the guy for insect identification but not as an independent scientist with own research profile and lab.

It is a pity that Dr Konwerski did not write a separate section in his autoreferat on popular scientific and conservational activities. He conducted several opinions and valorizations with respect to nature conservation. I missed an institutional engagement in nature conservation. Concluding, the activities of Dr Konwerska with respect to the popularization of science are notable for an academic teacher in the field of environmental sciences at his stage of career and partly compensate for the weaker performance in science.

Didactic and other activities

The didactic activities of Dr Konwerski are typical for his academic positions and do not raise concern. He provides Polish and English language lectures mainly in arthropod biology and ecology (faunistics), as well as in forensic entomology. I wondered about the too high numbers of didactic hours up to 2018. As a lecturer he should have been concentrated on science.

Dr Konwerski took part in more than 120 events devoted to science popularization, e.g. scientific exhibitions and festivals. He was also involved in a Natura 2000 expertise. As a member of various faculty commissions he was engaged in the promotion of the faculty and of science in general. These organizational activities are typical and do not raise concerns.

Conclusion

This was a difficult decision. I had to weigh the scientific, educational, and organizational activities of Dr Konwerski. The habilitation is a scientific degree and thus the scientific quality has priority. However, applied aspects of scientific activities more and more gain importance. In the present case these outweigh to a certain degree the weak scientific performance. Didactic and organizational activities do not raise concern and are typical for an

academic teacher after 20 years of activity. In the light of my evaluation, I think that this is a weaker application based on descriptive and confirmatory work on insect biology and insect - mite relationships without a wider scientific perspective. I missed own grant activity and constant international cooperation. I also missed higher ranking own publications. In turn, Dr Konwerski is an established entomologist well recognized in his field. The high number of publications where he served as co-author and his status as expert in applied and forensic entomology demonstrates the need for this type of academic activity. These activities place the current request at the lower level for a successful habilitation application. In my view, Dr Konwerski fulfills the requirements defined by art. 18 and 18a on scientific degrees and titles of the Polish law on higher education from 2003 (changed by Dz. U. 2017, poz. 1789 and Dz. U. 2018, poz. 1669) and from 2018 (art. 179). I support his application to obtain the habilitation degree in the field of Biology.

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