

# ***Paederus* dermatitis**

## **A bibliometric analysis of an emerging disease in travelers**

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Dear Editor,

Recently, reports of *Paederus* dermatitis in the literature, including travelers have been on rise, and we would like to discuss about the knowledge on this reflected on published papers in the indexed-literature [1].

*Paederus* dermatitis is a self-healing, erythematous, vesicubollus irritant contact dermatitis caused by insects (beetles) which belongs to the *Staphyllinadae* family, *Paederinae* subfamily, their genus has approximately 622 species, 30 of which have shown to cause lineal dermatitis [2, 3]. It is caused by accidentally brushing against, pressing or crushing the beetle over the skin that provokes the release of its coelomic fluid which contains paederin, a potent vesicant agent that in 24-36 hours provokes acute dermatitis with or without mild itching-burning sensation and the become crusted and scaly within a few days and heal completely in 10-12 days, with a transient post-inflammatory hyperchromic patch [4, 5]. *Paederus* dermatitis has typical manifestations like pustules and vesicles on an erythematous base, this can heal naturally in a week or lead to various complications that include post-inflammatory hyperpigmentation, secondary infections, extensive peeling of the skin, and ulcerous dermatitis requiring hospitalization. Fever, arthralgia, nausea, vomiting, and neuralgia can also be observed in severe cases [6, 7]. *Paederus* is a worldwide der-

matitis but is more frequently reported in tropical regions of Asia, such as India, Pakistan and south-east Asia [8].

In order to assess the global scientific research on this emerging disease, a bibliometric analysis was conducted using available information deposited at major journals-indexing databases, such as Web of Science (WoS), Scopus, Medline, Google Scholar, LILACS, and SciELO. From the above-mentioned databases, data on indexed articles were retrieved, using the term "*Paederus*" as a main operator, from January 2012 till November 2019.

A total of 2411 *Paederus*-associated items were retrieved in our search. From Scopus, 88 articles were recovered (16% from China, 12% India and 11% Iran) being 2013 the year with the highest production (8.7%). From Medline, 99 were published from 2012 to 2019 (14.1% from India, 11.1% from Germany, 9.09% from Malaysia and 8.08% from Iran). These four countries were the ones that published most of the articles about *Paederus* (corresponding to 42.3% of all publications worldwide), 46.4% of the articles in the database were published from 2012 to 2019. From WoS, 90 articles were recovered (17.7% from China, 13.33% from USA and 10% from India), 2013 being the year with the highest production (18.8%). From SciELO, 12 articles were found (75% from Brazil, 8.33% from Argentina, 8.33% from Peru and 8.33% from South Africa). From Google Scholar, 2110 articles were recovered (USA, China and Australia were the ones that published more). From LILACS, 12 articles were recovered (16.6% from Argentina, 25% from Brazil, 8.3% from China).

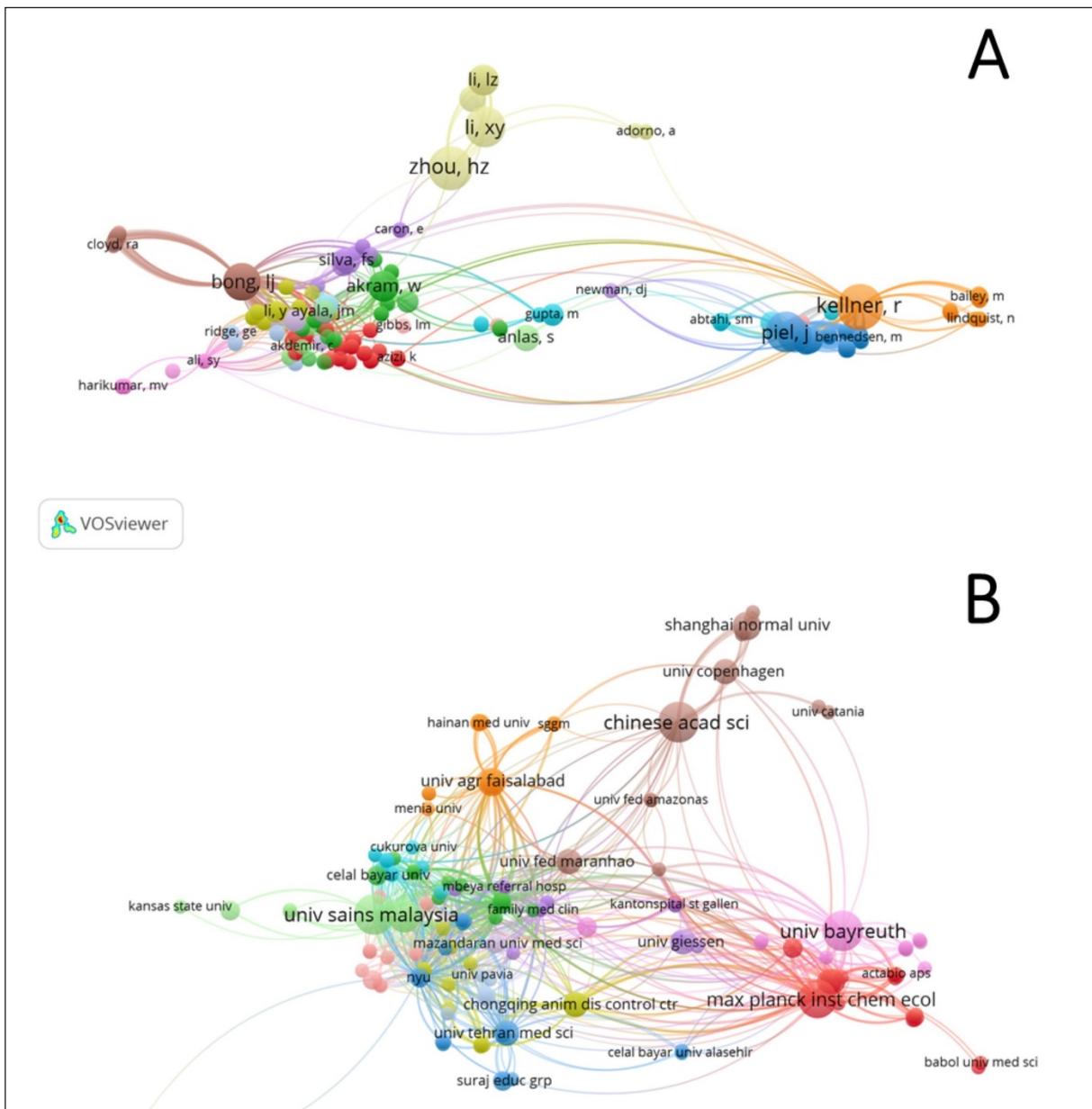
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Although, in a general context, the number of articles published about *Paederus* is not high, the H index for this topic is 22 in WoS and 28 in Scopus. Cardinaly, the average number of citations per publication was 15.7 and the most cited article specifically addressing *Paederus* in the literature has received 377 citations in Scopus,

which along with our findings through network analysis, clearly reveal the imperative need to increase international cooperation to overcome the current weakness prevailing in *Paederus* research networks. Kellner, R.L.L. and the Universitat Bayreuth are the top cited author and institution, respectively (Figure 1).



**Figure 1** - Top cited authors (A) and organizations (B) publishing on *Paederus*. Analyses made with VOSviewer (open access software).

Through our analysis, China leadership in “*Paederus*” global research clearly stands up, this could be associated with the outbreak of 268 cases in a factory in China and the increase registry of cases in that country due to the predisposition of *Paederus* to temperatures above 20°C, the rains and humidity [4, 7]. Other countries, as those located in Asia (Japan and South Korea) and South America (Brazil) have also increased their scientific output in recent years owing their outbreaks during July-September due to different crops, temperature, relative humidity and soil moisture contents, which affects mainly to farming communities living in the rural areas with no proper housing facilities (*i.e.*, with broken doors, windows without screens) or they lived in the open air, and also many people consult with the same manifestations that are easily confused with other diseases [7-9]. United States of America, with a 24.5% of the scientific contributions, has begun to increase its production efforts in this area due to the potential risk that this represents globally and many travelers that arrive from other countries with *Paederus* dermatitis.

*Paederus* dermatitis poses potentially public health risks and further research and development is needed, including surveillance and diagnostics, as has been evidenced in this bibliometric analysis. Efforts in research should lead to a better understanding and evidence-based information that would help us for a diagnosis and timely management of this dermatitis.

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### Conflicts of interest

None.

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