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Perspectives: Three years on, palaeontology still online

by The Palaeontology [online] Team

Palaeontology and the history of life are topics that capture the imaginations of children and adults alike, many of whom are keen to learn all about the latest weird wonders discovered by science. Communicating cutting-edge research to the public can be difficult, however, partly because scientists tend to publish their results in technical papers aimed at other scientists, but also because these papers are generally not freely available to non-academics — although the growth of [open access](#) means that this is improving in many countries. Popular-science writers provide accurate and accessible summaries of some of the most topical work, but can cover only a fraction of the research carried out by palaeontologists, naturally focusing on current stories rather than the wealth of knowledge already out there. Moreover, misrepresentations of palaeontologists' work are commonplace in the mainstream media, with research results often reported incorrectly, or lacking essential context. Taken together, all this hampers the public understanding of Earth history and contributes to the denial of evolution and climate change.

These issues were foremost in our thoughts when we set up Palaeontology [online] in 2011. The goal of the site is to publish monthly articles on palaeontology and related topics, written by experts, but understandable to secondary/high-school students and non-specialist adults. All of these articles are free to access, ensuring that anyone, anywhere in the world can read them whenever they want — all they need is an internet connection. The website, which is supported by the [Palaeontological Association](#), officially launched to the public in July 2011 with an article by Alistair McGowan about [biodiversity](#). Since then, we have published a total of 37 articles, which have been seen by more than 60,000 unique visitors from 179 countries (Fig. 1). To celebrate our three-year birthday, this month we take a quick look back at the articles that have helped to make the site the success it is today.

As seems fitting given that palaeontology is the study of ancient life, a large number of our articles are focused on fossils — the preserved remains or traces of long-dead organisms (Fig. 2). This has included groups that most people have heard of, such as [pterosaurs](#), [marsupials](#), [trilobites](#) and [apes](#), as well as much less familiar forms, including ancient [animal embryos](#), [tree-kangaroos](#), [heterostracans](#) and [placodons](#). The site has featured a range of articles about fossil [arthropods](#) — which is no surprise, given that the group encompasses the majority of all species alive today — notably [arachnids](#) (for example spiders and scorpions), [pycnogonids](#) (sea spiders), [chasmataspids](#) and [xiphosurans](#) (horseshoe crabs), all of which belong to a larger grouping called the [chelicerates](#). There are also a number of articles covering broader topics, but with a particular focus on the fossil record, including [coal swamps](#), [vertebrate tracks](#), [the preservation of colour](#), [plants and past environments](#), [animal development](#), [concretions](#), [dinosaur eggs](#) and [the interactions between arthropods and plants](#).

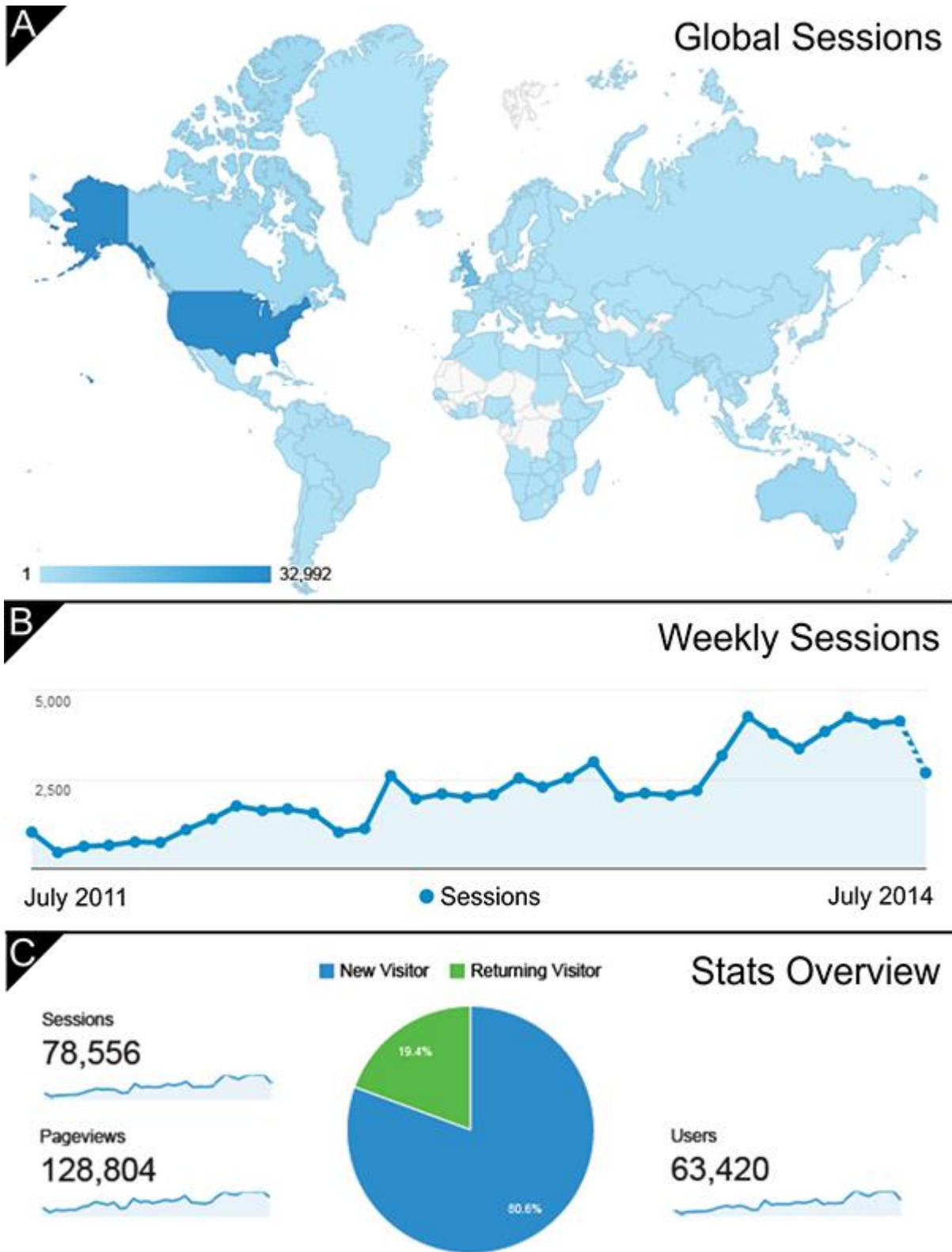


FIGURE 1 — WEBSITE STATISTICS FOR PALAEOLOGY [ONLINE] OVER THE PERIOD FROM JULY 2011 TO JULY 2014. A. WORLD MAP SHOWING THE LOCATIONS OF WEBSITE VISITORS. THE NUMBER OF VISITORS IS INDICATED BY THE SHADE OF BLUE. B. LINE GRAPH SHOWING THE NUMBER OF VISITS PER WEEK. C. LINE GRAPHS SHOWING THE TOTAL NUMBER OF SESSIONS, PAGE VIEWS AND USERS, AS WELL AS A PIE CHART DEPICTING THE BREAKDOWN BETWEEN NEW AND RETURNING VISITORS.

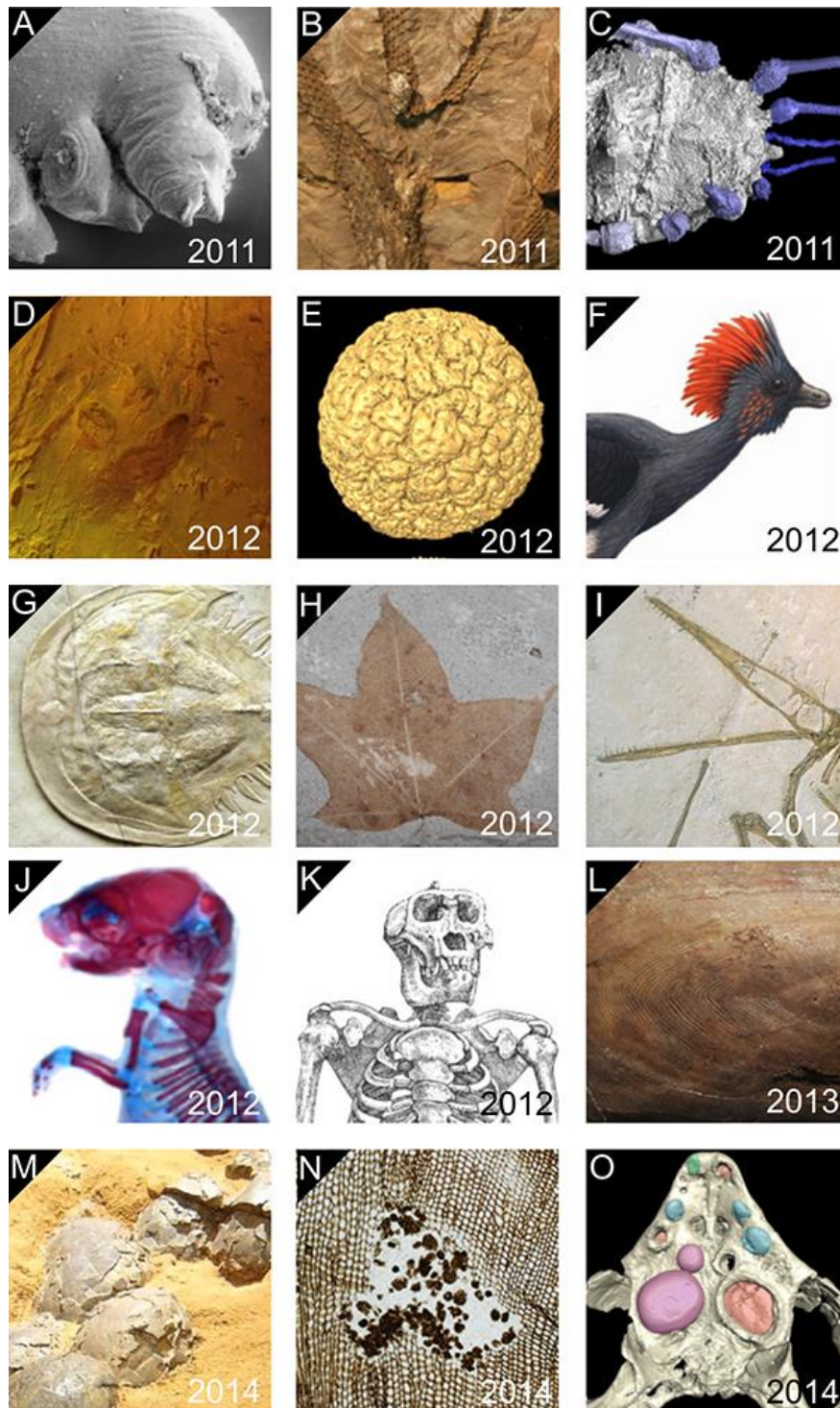


FIGURE 2 — IMAGES FROM SELECTED FOSSIL FOCUS ARTICLES FROM THE LAST THREE YEAR. A. LARVAL PYCNOGONID FROM VOLUME 1 ARTICLE 3. B. FOSSIL SCALE TREE FROM VOLUME 1 ARTICLE 4. C. THREE-DIMENSIONAL RECONSTRUCTION OF A FOSSIL HARVESTMAN FROM VOLUME 1 ARTICLE 7. D. FOSSILIZED DINOSAUR TRACKS FROM VOLUME 2 ARTICLE 1. E. THREE-DIMENSIONAL RECONSTRUCTION OF A FOSSIL EMBRYO FROM VOLUME 2 ARTICLE 2. F. RECONSTRUCTION OF LIFE COLORATION IN A DINOSAUR FROM VOLUME 2 ARTICLE 3. G. FOSSIL HORSESHOE CRAB FROM VOLUME 2 ARTICLE 6. H. FOSSIL MAPLE-TREE LEAF FROM VOLUME 2 ARTICLE 7. I. FOSSIL PTEROSAUR FROM VOLUME 2 ARTICLE 9. J. DEVELOPING PLACENTAL MAMMAL FROM VOLUME 2 ARTICLE 10. K. DRAWING OF A GORILLA SKELETON FROM VOLUME 3 ARTICLE 9. L. FOSSIL HETEROSTRACAN FROM VOLUME 3 ARTICLE 11. M. FOSSILIZED DINOSAUR EGGS FROM VOLUME 4 ARTICLE 4. N. COPROLITES IN FOSSILIZED WOOD FROM VOLUME 4 ARTICLE 5. O. THREE-DIMENSIONAL RECONSTRUCTION OF A FOSSIL PLACODONT FROM VOLUME 4 ARTICLE 6.

Of course, palaeontology isn't just about fossils, and there are several articles dealing with large-scale patterns in Earth history (Fig. 3). These include [the Paleocene–Eocene Thermal Maximum](#), [the Cambrian explosion](#), [the origin of life](#), [body-size evolution](#) and [the latitudinal biodiversity gradient](#). In addition, there are contributions outlining the approaches and techniques used in modern palaeontology, such as [the principle of parsimony](#), [methods for collecting and analysing shape data](#), [palaeoecology and the live–dead agreement](#), [naming fossils](#) and [ancient DNA](#). Finally, there are articles about varied aspects of life as a palaeontologist, including [career paths](#), [the influence of the internet and open access](#), [what is \(and what isn't\) palaeontology](#) and [the history of the field](#).

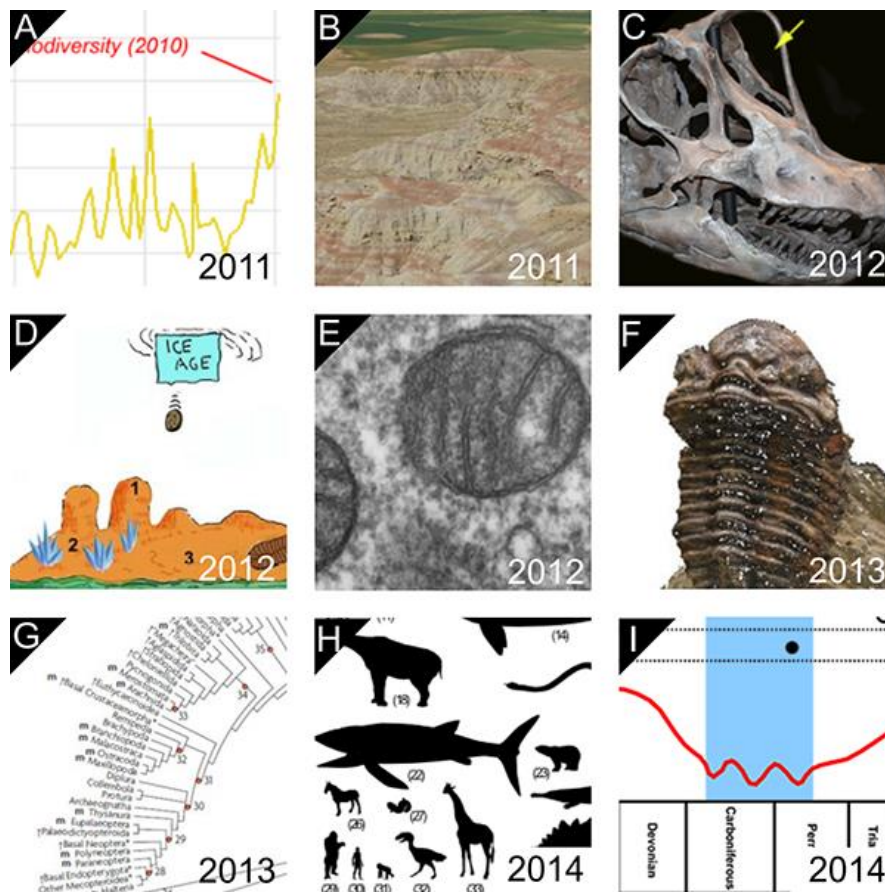


FIGURE 3 — IMAGES FROM SELECTED PATTERNS IN PALAEOLOGY ARTICLES FROM THE LAST THREE YEARS. A. NEWSPAPER ARTICLES ON BIODIVERSITY WITH TIME FROM VOLUME 1 ARTICLE 2. B. SEDIMENTS SPANNING THE PALEOCENE–EOCENE BOUNDARY FROM VOLUME 1 ARTICLE 5. C. EXAMPLE OF PARALLEL EVOLUTION OF MODIFIED NOSTRILS IN A SAUROPOD DINOSAUR FROM VOLUME 2 ARTICLE 4. D. MODEL OF THE EDIACARAN BIOSPHERE FROM VOLUME 2 ARTICLE 8. E. MITOCHONDRIA IN THE MAMMAL LUNG FROM VOLUME 2 ARTICLE 11. F. THREE-DIMENSIONAL RECONSTRUCTION OF A TRILOBITE FROM VOLUME 3 ARTICLE 2. G. EVOLUTIONARY RELATIONSHIPS OF DEVELOPMENTAL MODEL SPECIES FROM VOLUME 3 ARTICLE 6. H. SILHOUETTES OF THE LARGEST ANIMAL SPECIES FROM VOLUME 4 ARTICLE 1. I. FLUCTUATIONS IN GLOBAL TEMPERATURE WITH TIME FROM VOLUME 4 ARTICLE 3.

Phew, I think that's everything. As you can see, we've covered an awful lot in the past three years. Nevertheless, this is only the tip of the palaeontological iceberg, and with so many promising young researchers around, there will no doubt be plenty to write about for years to come. All that remains is to thank everyone who has contributed articles to the site and, in fact, everyone who has read the articles — thanks for your continued support, and here's to many more years!