Revue de Paléobiologie, *Genève* (2024) 43 (1): 155-162 ISSN 0253-6730

The first case of paleontological fraud: Beringer's *Lügensteine* reconsidered

Jelle W.F. Reumer

Department of Earth Sciences, Utrecht University, Princetonlaan 8a, 3584 CB Utrecht, the Netherlands; also at Natural History Museum Rotterdam, Rotterdam, the Netherlands and Naturalis Biodiversity Center, Leiden, the Netherlands; j.w.f.reumer@uu.nl, orcid: 0000-0002-0520-0103

Abstract
Some five hundred fake fossils from the early eighteenth century still exist, that are known as 'Beringer's *Lügensteine*' (lying stones). It is generally assumed that they were made as a practical joke to ridicule Professor J.B.A. Beringer. Here, I hypothesize that these *Lügensteine* are instead an early case of scientific fraud and the first paleontological fraud, with Beringer himself as the 'culprit'. Either he sculpted them himself or, most probably, given the amount of forgeries and the relatively short time of production, he had them made. The main argument in favour of this hypothesis is that it would be utterly unnecessary to produce so many forgeries; no more than a dozen specimens would have sufficed to reach the intended objective of Beringer's humiliation. The abundance of specimens could be the result of Beringer's desire to publish an important paleontological discovery. The *Lügensteine* were then an intentional scientific fraud.

Keywords
Historical paleontology, *Figurensteine*, scientific fraud, Würzburg.

Résumé
Le premier cas de fraude paléontologique: les 'pierres menteuses' de Beringer réévaluées.- A peu près cinq cent faux fossiles réalisés au début du XVIII[e] siècle existent encore de nos jours; ils sont connus comme 'les fausses pierres de Wurtzbourg' (Allemagne) ou 'les pierres menteuses de Beringer'. On dit souvent que celles-ci ont été faites pour ridiculiser le professeur Beringer. Ici, je propose l'hypothèse que ces pierres constituent en effet une fraude scientifique et paléontologique, mais commise par Beringer lui-même. Peut-être les a-t-il sculptées lui-même, ou, vu la grande quantité de ces pierres et la relative courte période de production, les a-t-il faites faire. L'argument principal pour cette hypothèse est qu'il n'est pas nécessaire de produire une telle quantité de fausses pierres pour ridiculiser M. Beringer – une douzaine au maximum aurait suffi. Beringer les a probablement commandées pour satisfaire son désir de publier un ouvrage paléontologique important. Les pierres menteuses seraient ainsi une fraude scientifique intentionnelle.

Mots-clés
Histoire de la paléontologie *Figurensteine*, fraude scientifique, Würzburg.

1. INTRODUCTION

Six curious fossils can be seen in the permanent exhibit in the Teylers Museum in Haarlem, the Netherlands (Fig. 1). They are forgeries made in the early eighteenth century that are commonly known as 'Beringer's *Lügensteine*', or lying stones, so named after Professor J.B.A. Beringer from Würzburg, Germany. During guided museum tours in this museum as well as in other museums, but also during lectures and in the (popular) literature, it is commonly explained that these *Lügensteine* were made by Professor Beringer's students in order to bestow upon him a practical joke, or even to make a fool of the estimable scientist. It is this explanation that I heard when I first visited the Teylers Museum myself in the 1980's, and it is still being told. A second explanation states that it was some envious colleagues of Beringer who deliberately gave him the fake fossils in order to discredit him (Jahn & Woolf, 1963; Schreurs, 2014). Schreurs (2014) wrote (translated from Dutch): 'The evil plan had a disastrous outcome for the colleagues themselves when the true situation became known. Beringer sued them in court and won. This meant the end of the careers of the envious colleagues'. Most probably, both stories

Submitted December 2022, accepted October 2023
Editorial handling: Marie-Anne Heran, François Thirion
DOI: 10.5281/zenodo.10732353

Fig. 1: One of the six *Lügensteine* in the collection of Teylers Museum, Haarlem, the Netherlands (inv. nr. 16390). Source: Teylers Museum.

are not true. Here, I hypothesize that both these stories, the 'students story' and the 'colleagues story', are urban myths and that, on the contrary, the *Lügensteine* were produced on Beringer's own request.

2. BERINGER

Dr. phil. Dr. med. Johann Bartholomaeus Adam Beringer (December, 1667?-April 11, 1738) was a professor of Medicine at the University of Würzburg, Germany; court physician of the local ruler, the prince-bishop (*Fürstbischof*) of Würzburg; director of the local hospital and founder of its botanical garden. He inherited these functions from his father, Johann Ludwig Beringer, a sort of nepotism that was not unusual at the time. Beringer junior would have been completely forgotten by now (like most other people after some centuries, unless they produced some tangible heritage such as books, paintings or musical compositions), if not for the publication of an interesting volume called *Lithographiae Wirceburgensis* (Beringer, 1726), in which a great number of alleged fossils was described and depicted, the so-called *Figurensteine* (or figure stones). Soon after the book was published, they were discovered to be forgeries, and these objects have since become known as Beringer's *Lügensteine* (lying stones).

Beringer was born and raised in Würzburg, where he studied anatomy, therapy, botany, chemistry and philosophy, finishing his education in 1693 with an academic promotion. Soon after, in December 1694, he was appointed as extraordinary professor at the medical faculty, again in Würzburg. Probably being born in December 1667 (exact certainty is unfortunately lacking), he was barely 27 years old then. According to the general opinion and contemporaneous sources, he must have been a rather arrogant person (Niebuhr & Geyer, 2005). As was usual in the early eighteenth century, Beringer was one of those universal scholars who studied and taught various academic disciplines such as medicine, botany, zoology, mineralogy, and astrology (!), or a random combination of these, and he was also interested in fossils. A number of hypotheses had been proposed for the origin of fossils in the seventeenth century, and fossils were still at Beringer's time highly enigmatic objects. Although he was a highly estimated scholar within the local society of Würzburg, not in the least because of his appointment as the personal physician of the prince-bishop, Beringer must have had a rather restricted view of the world around him. He apparently did not travel abroad or was

not allowed to do so. It appears that he left Würzburg only once for a trip to Leyden (the Netherlands), where he visited the famous botanical garden (the *Hortus Botanicus*) in the framework of his task to establish a botanical garden in Würzburg. He started the construction of this garden in 1696 (Niebuhr & Geyer, 2005, p. 7), so the journey probably took place shortly before that date. No other journeys to European cities, universities, academies or institutions are recorded. His position as the court physician of the subsequent prince-bishops could have required his permanent presence in town and hence prevented or even prohibited longer travels to European cities. In addition, Beringer – as far as we know – did not become member of any learned society in Germany or abroad. There is not even a known portrait of him in existence – a remarkable fact.

It is therefore interesting to briefly compare Beringer with the contemporaneous physician and naturalist Johann Jakob Scheuchzer (1672-1733). Scheuchzer was born in Zürich (Switzerland); he studied in Altdorf near Nürnberg (Germany), defended his dissertation in Utrecht (the Netherlands), then returned to Altdorf (for mathematics) and to Zürich to become junior town physician, later professor of mathematics and senior city physician (Leu, 1999). He declined an offer to become the court physician of Russian czar Peter the Great, and he was a member or fellow of several dozen learned societies, among which were the *Royal Academy* in London and the *Académie des sciences* in Paris. He published important scientific papers while writing to, and receiving letters from, at least eight hundred correspondents throughout Europe. In short, Scheuchzer was a man of the world. Scheuchzer published a description of one of the most historically important fossils in 1726, by coincidence the same year in which Beringer's publication about the *Lügensteine* appeared. It is the so-called 'flood-man', the fossil known as *Homo diluvii testis et theoskopos*, or 'Man who witnessed the Biblical Flood and saw God'. The fossil, which is now on exhibit in Teylers Museum, was found in a Miocene quarry at Öhningen near Lake Constance, southern Germany. In 1811, Georges Cuvier and his assistant Charles Laurillard noticed and proved this fossil to be a giant salamander (subsequently named *Andrias scheuchzeri* Tschudi, 1837). Thus, Scheuchzer's career as a well-known naturalist shows a stark contrast with that of the secluded Beringer. Although we do not know whether or not Beringer and Scheuchzer ever met in person, it seems highly unlikely that Beringer was unaware of the professionalism of Scheuchzer who published important works long before 1726 (e.g., Scheuchzer, 1708); this may have made him envious. Possibly, Beringer was now looking for an opportunity to boost his image as a proper naturalist.

3. *LÜGENSTEINE*

Würzburg, nowadays one of the larger cities in Bavaria with about 127.000 inhabitants, was in the early eighteenth century a relatively important administrative center and bishopric with a university and a hospital, accommodating about 16.000 souls. Its ruler was the prince-bishop, who exercised both civil and clerical powers over the town and its eastern Franconian surroundings. The city and its people were rather self-centered; one was either an autochthonous Würzburger, or an immigrant from elsewhere and looked upon with distrust or arrogance (Niebuhr & Geyer, 2005). Würzburg was mostly known for its vineyards. The wine produced was partly of good quality, partly of mediocre quality used to satisfy the need for wine in Catholic church celebrations. Yet there was a certain political urge to make the town more widely known. But how? At the time, there was a high commercial demand for curiosities such as fossils to be incorporated in curiosity cabinets or natural history collections, and the presence of a fossiliferous locality would possibly attract visitors and improve the local economy. Thus, the idea of an important paleontological discovery would at the same time enhance commercial interest in Würzburg by attracting visitors and money, and it could increase Beringer's fame as a natural scientist. In this framework it is noteworthy that Beringer, in the preface of his publication, mentioned that his discoveries would provide his home country (Franconia) with as much fame as the sweet grape juice from the fields around Würzburg ('*der süße Rebensaft der Gefilden Würzburgs*', Niebuhr & Geyer, 2005, p. 22).

Beringer's desired discoveries were strange fossils. The first *Figurenstein* appeared in the spring of 1725. Although the production of the forgeries must have started somewhat earlier, Beringer announced that he received the first specimens on May 31st, 1725, the day of the ecclesiastic holiday of *Frohleichnam* (Feast of Corpus Christi). The specimens had apparently been found in a quarry near Eibelstadt, a small town some 10 km to the southeast of Würzburg, where Middle Triassic Muschelkalk sediments crop out and where fossils such as specimens of the ammonite genus *Ceratites* de Haan, 1825, had been discovered. Things then quickly gathered pace; during the entire summer of 1725, the most wonderful alleged fossils were found and brought to the professor in Würzburg. The collecting and transportation of the fossils were carried out by four youngsters from Eibelstadt. These boys, the identity of three of whom is known (they were 14, 17 and 18 years old), later became the 'students' in the disputed stories. Did they not only 'discover' the stones, but also produce them?

On October 4, 1725 a newspaper article appeared in the '*Neuen Zeitungen von Gelehrten Sachen*' that was in fact a detailed description of the various figures on the stones: translated from the original German 'the rarest and among fossils so far undescribed animals from the air,

sea, land and water (…) which he (= Beringer) mostly collected himself' (Niebuhr & Geyer, 2005, p. 19). It was also mentioned therein that 'many learned persons at first observation could not believe anything else than that they were artificially fabricated' (Niebuhr & Geyer, 2005, p. 19). According to Niebuhr & Geyer (2005, p. 20) it is without doubt that Beringer had written or communicated this article himself; apparently he knew already then about opposition by persons who doubted the authenticity of the stones, and by writing this accepted the risk of lending greater credence to the interpretations of 'many learned persons' than his own.

4. *LITHOGRAPHIAE WIRCEBURGENSIS*

It was two learned fellow townsmen who became Beringer's most fierce opponents: professors Johann Georg von Eckart (1664-1730) and Jean Ignace Roderique (1697-1756). They are the ones featured in the 'colleagues story'. Neither colleague was an autochthonous Würzburger; Eckart settled in town in March 1724 and Roderique only in October or November 1725, i.e. after the first discoveries of the *Lügensteine*. Both gentlemen publicly argued that Beringer's stones were fakes, which then led to an excursion to the Eibelstadt quarry late March/early April 1726. The prince-bishop himself attended the visit to the quarry, as did professors Eckart and Roderique, some other Würzburg dignitaries and the above-mentioned youngsters from Eibelstadt. Beringer managed to excavate some *Figurensteine*, but then Roderique suddenly produced five other stones from his pocket, saying that he sculpted them in about two hours. Beringer was offended. This defamation led him to go to court and demand a legal inquiry. Very soon after the excursion, on April 14th and 15th and on June 11th, 1726, three youngsters were questioned. They obviously denied being implicated in the forgery and were not punished. Colleagues Eckart and Roderique did not see the end of their careers as a result of the trial, as Schreurs (2014) suggested. Eckart remained in function as a professor and died in Würzburg in 1730; Roderique then tried to succeed him but he was rejected by the authorities and then moved to Cologne (Köln, Germany), where he became a professor of history.

Lithographiae Wirceburgensis appeared in May 1726, one month after the visit to the quarry in Eibelstadt and the first interrogations (Beringer, 1726). In the publication, Beringer hinted several times at the notion that some people believed the specimens to be fakes, but he continued insisting that they were true freaks of nature. He must not have had much choice: a confession might have ruined his reputation, his career and his local fame. Although the *Lithographiae Wirceburgensis* and the stones published and depicted therein (Fig. 2) were considered by many to be nonsense, Beringer was not ostracized for it. He was able to maintain his functions as physician and professor; he later published a few medical papers and died on April 11, 1738. As a result of later publications, a.o. by Walch (1768-1773), who stated that Beringer let himself be cheated by accepting the sun, the moon, stars, shells and even supposedly Hebrew letters on forged stones, Beringer's reputation as a nature researcher, or in modern terminology a scientist was posthumously ruined, and so it remains today; see also De Jong (1990).

5. PRACTICAL JOKE OR FRAUD?

Originally, there were perhaps as many as two thousand of these fake fossils (Beringer, 1726, p. 83: '*circiter duo millia*'). Beringer depicted 204 of these on his 21 plates. Niebuhr & Geyer (2005) have depicted all specimens that were known by the time of their publication, including specimens that had been photographically documented but were subsequently lost or are otherwise considered untraceable. They recorded 433 specimens and 60 lost ones, totaling 493 stones. During a visit to the *Staatliches Museum für Naturkunde Karlsruhe* in Karlsruhe (Germany) in 2012, I was shown and allowed to photograph four *Würzburger Lügensteine* that appear not to have been mentioned or depicted by Niebuhr & Geyer (2005), which are here reproduced (Fig. 3). This makes a total of 497 known stones, including the apparently untraceable ones. So, at present around five hundred of perhaps some two thousand of these *Lügensteine* are still preserved in various museum collections or otherwise recorded. Given the fact that three centuries have passed since the production of the stones, and the survival of around five hundred *Lügensteine* into the 20th and 21st centuries, it seems not unlikely that indeed some two thousand of them were initially produced. This is an enormous amount of forgeries.

The manufacturing period of the *Lügensteine* brackets between some time before May 31st 1725, when, according to the texts, the first stone was received by Beringer, and April 1726, when the visit to the quarry near Eibelstadt took place. This is a time span of roughly one year. Assuming the number of two thousand produced stones to be correct and a production window of roughly one year, this implies, depending on the number of available working days, that 5 to 7 stones were produced on a daily basis. This certainly goes far beyond both the number and the effort required for a practical joke.

The question is thus: why should one need so many forgeries for a practical joke, or to make one seem a fool? In either the 'students story', in which it was some students who wanted to make a practical joke with their professor, or in the 'colleagues story', where envious colleagues wished to ridicule Beringer, a much smaller number of fakes would have sufficed. When asking arbitrary people how many specimens they would use in case they wanted to bestow a practical joke upon someone, the

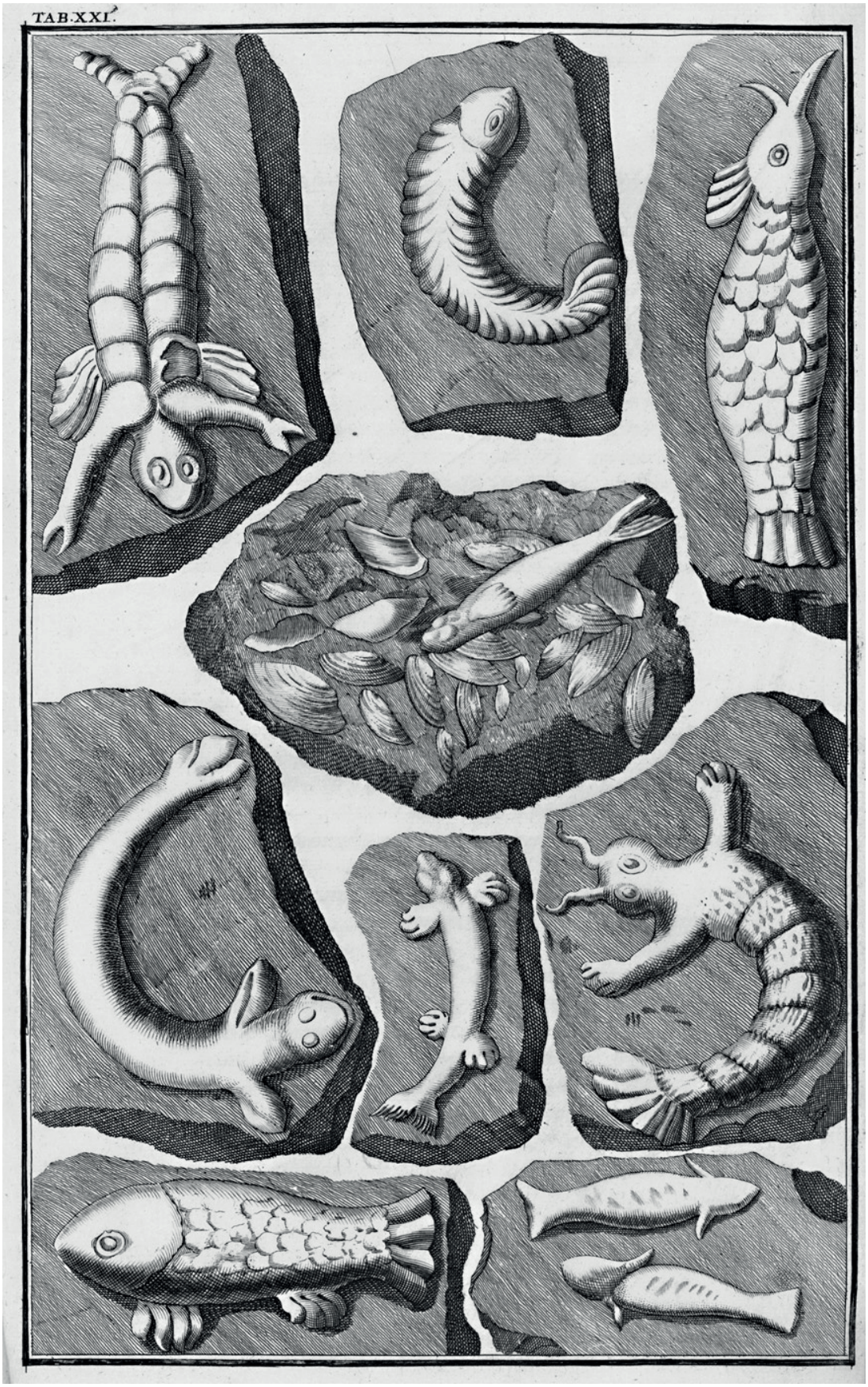

Fig. 2: Nine of the *Lügensteine*, as depicted on plate 21 of the *Lithographiae Wirceburgensis*. Source: Wikimedia commons.

Fig. 3: Four *Lügensteine* not mentioned by Niebuhr & Geyer (2005), collection Staatliches Museum für Naturkunde Karlsruhe, Karlsruhe (Germany). Photograph: author.

answers received invariably vary between 'one or two', or 'perhaps a dozen' (personal observations). That seems plausible.

It is therefore more likely that the forgeries were Beringer's own (failed) attempt to improve his rather mediocre prestige as a nature researcher and perhaps also that of his native city of Würzburg, by publishing a book of important natural curiosities. The more of them, the better. Perhaps Beringer employed the youngsters from Eibelstadt to do the actual work of carving the mostly rather simple figures out of the grey Muschelkalk stone from Eibelstadt. He could have paid them to do so; during the trial in 1726 they remained silent about it. We also do not know whether the stones were produced as 'merchandise' to bring in some money.

To our modern and experienced eyes the *Lügensteine* are easily recognized as obvious fake fossils. They are simple, they show organisms that do not exist, and even some celestial bodies (Beringer, 1726, plate 3) and a few figures that supposedly resemble Hebrew texts (Beringer, 1726, plate 7). But in the early eighteenth century, fossils were a phenomenon that hardly anyone could properly interpret as the remains of organisms that once lived. In fact, it was the aforementioned J.J. Scheuchzer (Scheuchzer, 1708) and before him Danish scholars Ole Worm (1588-1654) and Niels Stensen, Steno (1638-1686) (see Hoch, 2013), who were among the first to publish the opinion that fossils were no longer to be considered freakish products of nature or of divine intervention, but that they were true remains of organisms that once lived (some, such as Scheuchzer, 1708 and 1726, claimed the organisms died during the biblical flood). However, the (partly) illiterate general public did not understand what fossils were, let alone that people were able to tell the difference between a real fossil and a forgery. In summary, the reasons why Beringer had the *Lügensteine* made and why he subsequently published his 'discoveries' were (1) his frustration at being an unknown and underestimated scholar, a situation at least partly caused by his seclusion in Würzburg, (2) the desire to improve his reputation as a nature researcher, (3) the collateral desire to boost the fame of his hometown Würzburg and, by association, himself. The context in which this fraud could take place, to a certain limit, was the general public innocence and ignorance about the true nature of fossils.

6. CONCLUSION

In conclusion, I hypothesize that the *Lügensteine* represent the first recorded case of paleontological fraud, with Beringer as the 'culprit'. Either he sculpted them himself or, most probably, given the amount of forgeries and the relatively short period of production, he had them made, probably by the four Eibelstadt youngsters. The main argument in favour of this hypothesis is that otherwise it would be utterly unnecessary to produce a large number of fakes, if not for a practical purpose such as sale. Both in the case of the 'students story' and of the 'colleagues story', no more than a dozen specimens would have sufficed to achieve the intended objective, that being the humiliation of Beringer. A more plausible reason for the abundance of specimens is Beringer's desire to publish an important paleontological discovery, which was to be the *Lithographiae Wirceburgensis*. The *Lügensteine* were not just a silly forgery, they were an intentional fraud.

ACKNOWLEDGEMENTS

The author wishes to thank the staff of the Teylers Museum (Haarlem, the Netherlands) for their cooperation and for providing Fig. 1; Dr Wolfgang Munk and Dr Samuel Giersch (SMNK Karlsruhe, Germany) for showing the *Lügensteine* in their collection; several friends, colleagues and conference participants for answering the question on the required number of fake fossils; and the organizers of the 5e Colloque Georges Cuvier in Montbéliard (France) for the opportunity to participate. Three anonymous reviewers provided interesting and helpful suggestions that improved the manuscript.

REFERENCES

Beringer J.B.A. 1726. *Lithographiae Wirceburgensis*. Würzburg, Philipp Wilhelm Fuggart. (in facsimile: Beringer J.B.A. & Hueber G.L. *Lithographiae Wirceburgensis*. Nachdruck der 1. Auflage von 1726 mit 10 S. Zueignung und 5 S. Corollaria Medica von G.L. Hueber sowie 98 S., 22 Taf. und 1 S. Erratum zu den Figurensteinen von J.B.A. Beringer. *Beringeriana Sonderheft* 5, Teil I; Würzburg 2005).

De Haan G. 1825. *Monographiae Ammoniteorum et Goniatiteorum Specimen*. ii, Hazenberg, Leiden, 168 pp.

De Jong W. 1990. Liegende stenen. Dr. Beringer's Lügensteine. *Teylers Magazijn*, 29, winter 1990: 11-16.

Hoch E. 2013. Diagnosing fossilization in the Nordic Renaissance: an investigation into the correspondence of Ole Worm (1588-1654). *In:* Duffin C.J., Moody R.T.J. & Gardner-Thorpe C. (eds). *A history of Geology and Medicine*. Geological Society of London, Special Publications, 375: 307-327.

Jahn M.E. & Woolf D.J. 1963. *The Lying Stones of Dr. Johann Bartholomew Adam Beringer being his Lithographiae Wirceburgensis; translated and annotated*. University of California Press, Berkeley, Los Angeles.

Leu U.B. 1999. Geschichte der Paläontologie in Zürich. *In:* Schmuki E & Brauchli P. (eds). *Paläontologie in Zürich. Fossilien und ihre Erforschung in Geschichte und Gegenwart*. Zürich, Zoologisches Museum der Universität Zürich, pp. 11-76.

Niebuhr B. & Geyer G. 2005. Beringers Lügensteine: 493 Corpora Delicti zwischen Dichtung und Wahrheit. *Beringeriana Sonderheft*, 5, Teil II. Würzburg, 188 S., 506 Fig., 1 Tab.

Scheuchzer J.J. 1708. *Bildnissen verschiedener Fischen, und dero Theilen, welche in der Sündfluth zu Grund gegangen*. Zürich: in Verlegung des Authoris, 1708. Source: Zentralbibliothek Zürich, 6.41,2. http://doi.org/10.3931/e-rara-12113 / Public Domain Mark

Scheuchzer J.J. 1726. *Homo diluvii testis. Bein-Gerüst eines in der Sündflut ertunkenen Menschen*. Bei David Reding, Formschneider, Zürich.

Schreurs J. 2014. De Lügensteine van Beringer. *Geo.brief*, 38(3): 3.

Tschudi J.V. 1837. Über den Homo diluvii testis, *Andrias scheuchzeri*. *Neues Jahrbuch für Mineralogie, Geognosie, Geologie und Petrefaktenkunde*, 5: 545-547.

Walch J.E.J. 1768-1773. *Die Naturgeschichte der Versteinerungen zur Erläuterung der Knorrischen Sammlung von Merkwürdigkeiten der Natur*. Paul Jonathan Felsecker, Nürnberg.