

ANNA KARPIEWSKA^{1*}  <https://orcid.org/0000-0002-4448-5594>

*DARIUSZ IWAN*²  <https://orcid.org/0000-0003-0146-7916>

*PRZEMYSŁAW SZYMROSZCZYK*²  <https://orcid.org/0000-0003-2226-5782>

*EWA LENARD*³  <https://orcid.org/0000-0002-1960-4520>

*MAREK HALAMA*³  <https://orcid.org/0000-0002-0904-6641>

*DOMINIKA PLUTA*¹  <https://orcid.org/0000-0001-6246-9566>

*TADEUSZ DOBOSZ*¹  <https://orcid.org/0000-0003-0413-9109>

¹ Molecular Techniques Unit, Department of Forensic Medicine, Faculty of Medicine, Wrocław Medical University, Wrocław, Poland

² Polish Academy of Sciences, Museum and Institute of Zoology, Warsaw, Poland

³ Wrocław University, Museum of Natural History, Wrocław, Poland

* Corresponding Author:

ANNA KARPIEWSKA Molecular Techniques Unit, Department of Forensic Medicine, Faculty of Medicine, Wrocław Medical University, Wrocław, Poland

ul. M. Skłodowskiej-Curie 52, 50-369 Wrocław

E-mail: anna.karpiewska@umed.wroc.pl

Phone: +48 717841588

*Analysis of museum labels description*¹

ABSTRACT

The aim of the study was to analyse the content of museum labels from various periods in terms of their usefulness in creating new labels for exhibits included in museum collections. Nearly 5,000 museum labels from the years 1811 to 2017 were reviewed, for exhibits at

¹ The authors thank Dr Marcin Kamiński for his help in browsing the zoological collections of the Zoology Museum in Łomna, as well as Dr Ryszard Kamiński, director of the Botanical Garden in Wrocław, and his colleagues for photographic access to porcelain labels.

the Museum of Zoology of the Polish Academy of Sciences in Warsaw, Herbarium of the University of Wrocław, and the Museum of Forensic Medicine at the Medical University of Wrocław. On the basis of the collected information, an attempt was made to develop a ‘universal label’ template, including a range of necessary information from the point of view of managing and maintaining the accessibility of the relevant collection.

Keywords: museum, museum collections, exhibit, description of the exhibit, label

Słowa kluczowe: muzeum, kolekcje muzealne, eksponat muzealny, opis eksponatu muzealnego, etykieta muzealna

Introduction

Museum collections are not only a legacy of the past, but also a source of material for research and teaching² in the present and a treasury of knowledge and culture for the future (as a result of digitisation).³ They perform many different functions, sometimes ambitious, sometimes contradictory or dubious, including providing unrefined crowd entertainment.⁴ A museum exhibit without a label is unintelligible, except to a small group of specialists. A museum label should play a dual role: its content should be understandable for every individual who views the museum collection, and for museum curators it should be a source of quick understanding necessary to rearrange an exhibition, select exhibits for exhibitions, restore a collection to the required location after its return from an external site and, in extreme cases (loss or destruction of inventory books), serve as an adequate vehicle of information about the exhibit. The literature on museum labels, as far as the authors know, is not very extensive.⁵

² F. Hosenally, N. Vanmuylder, S. Louryan, *The dental collection Hyacinthe Brabant: A pedagogic and scientific tool*, “Morphologie” 2016, No. 100 (328), pp. 24–35.

³ L.N. Hudson *et al.*, *Insect: Automating the digitalization of Natural History Collections*, “PLoS One” 2015, No. 10 (11), pp. 1–15.

⁴ F.P. de Ceglia, *The importance of being Florentine: A journey around the world for wax anatomical Venuses*, “Nuncius” 2011, No. 26 (1), pp. 83–108.

⁵ S.K. Jain, *A handbook of field and herbarium methods*, New Delhi 1977; A.K. Skvortsov, *The herbarium: Handbook of methods and techniques*, Moscow 1977; A.J. Hicks, P.H. Hicks, *A selected bibliography of plant collection and herbarium curation*, “Taxon” 1978, No. 27 (1), pp. 63–99; J.S. Womersley, *Manual for plant collecting and herbarium development*, “FAO, Field Doc.” 1980, No. 23, pp. 1–147; S. Bitgood, *Deadly sins revisited: A review of the exhibit labels literature*, “Visitors Behavior” 1989, No. 4 (3), pp. 4–11; *idem*, *The ABCs of Label Design*, “Visitor Studies” 1991, No. 3 (1), pp. 115–119; P.R. Mulieri *et al.*, *The type specimens of Tachinidae (Diptera) housed in the Museo Argentino de Ciencias Naturales*, “Bernardino Rivadavia”, Buenos Aires, “Zootaxa” 2013, No. 3670, pp. 157–176; G.J. Svenson, *Revision of the Neotropical bark mantis genus Liturgosa Saussure*, 1869 (Insecta, Mantodea, Liturgusini), “ZooKeys” 2014, No. 390, pp. 1–214; *idem*, *The type material of Mantodea (praying mantises) deposited in the National Museum of Natural History*, Smithsonian Institution, USA, “ZooKeys” 2014, No. 433, pp. 31–75; L.D. Patitucci *et al.*, *The type specimens of Calyptrate (Diptera) housed in non-traditional institutions in Argentina*, “Zootaxa” 3025, No. 3905(4), pp. 557–572; A. Salvador, J. Pickering, *Type catalogue of Terebridae (Mollusca, Gastropoda*,

Two items, a list of ‘deadly sins’⁶ committed by label makers, and detailed recommendations regarding the content and composition of labels for many different categories of exhibits, have been published.⁷ The aim of the present study was to analyse the contents of labels accompanying various categories of museum collections from different periods and to develop a ‘universal label’ template which would include a range of necessary information from the point of view of managing and assuring the accessibility of the relevant collection.

Materials and methods

Approximately 5,000 museum labels from the years 1811 to 2017 (Fig. I) were reviewed. Of these, approximately 40% accompanied exhibits at the Museum of Zoology of the Polish Academy of Sciences in Warsaw; 50% were used at the Herbarium of the University of Wrocław; and 10% were used at the Museum of Forensic Medicine of Wrocław Medical University.

On the basis of the collected information, an attempt was made to develop a ‘universal label’ template (Fig. II) containing all possible information about the exhibit from the point of view of managing and assuring the accessibility of the relevant collection – information not found in any analysed collection. The use of different fonts is compatible with Stephen Bitgood’s recommendations from 1991, while a number of other tips are taken from Chan Screven’s papers of 1986 and 1992.⁸

Results

The analysis of approximately 5,000 museum labels showed the enormous diversity in the information they contain. The name of the owner of the collection was most often placed on the label in a printed, stamped, or handwritten form. If a change of owner had occurred, there were two (or occasionally more) names on the label, but the original name had not always been deleted, making it difficult to study the provenance of the exhibit. In one case, there was information about the donor only, without specifying the beneficiary of the gift (Fig. III).

The name of the exhibit on the label was given with various degrees of precision (perfunctorily or in great detail). Detailed descriptions were usually associated with exhibits used in teaching (Fig. IV).

Conoidea in the Natural History Museum, London, UK, “Zootaxa” 2017, No. 4250(2), pp. 101–142; J. Vissers *et al.*, *Scientific user requirements for a herbarium data portal*. “PhytoKeys” 2017, No. 78, pp. 37–57.

⁶ *The herbarium handbook: Royal Botanic Gardens*, ed. D. Bridson, L. Forman, Kew 1992.

⁷ J. Drobnik, *Zielnik i zielnikoznawstwo*, Warszawa 1992.

⁸ C.G. Screven, *Exhibition and information centers: Some principles and approaches*, “Curator” 1986, No. 29 (2), pp. 109–137; *idem*, *Motivating visitors to read labels*, “ILVS Review” 1992, No. 2 (2), pp. 183–211.

The inventory number was placed on the label or on an additional label. In the event of a change, the obsolete number was usually crossed out. Sometimes, instead of the catalogue number, only the date of the exhibit's inclusion in the collection was given and the remaining information was entered for that date in the inventory book. This system failed in larger museums with a large influx of exhibits (Fig. V).

The place where the exhibit was acquired was given with varying precision; however, with the passage of decades, this accuracy has generally improved, as pointed out as early as 1968 (Fig. VI).⁹ The origin of the exhibit could sometimes be deduced from the content of the label; sometimes it was given directly. In general, it was also possible to guess what was so exceptional about the exhibit that it had been chosen for inclusion in the collection, although this information was rarely given directly. There was also great discretion permitted in the formatting of dates. The precision of dating varied greatly, from giving the year alone (sometimes approximately) to very detailed data (year, month, day, hour, and minute) (Fig. VII, VIII). Irrespective of the method of giving the date, reading it generally caused no problems, despite two unfavourable circumstances: the virtually complete disappearance in recent years of the notation of months using Roman numerals, and the custom of noting the year using its last two digits. In the case of old labels, differentiation of the years 1816 and 1916 may be uncertain; in such a case it may be helpful to analyse the tool used to enter the exhibit information, to be explained later in this work.

Information about the individual who included the exhibit in the collection could, in the simplest case, be obtained from his or her handwritten signature (Fig. 1). Information about the collector may have been printed, stamped, or embossed.

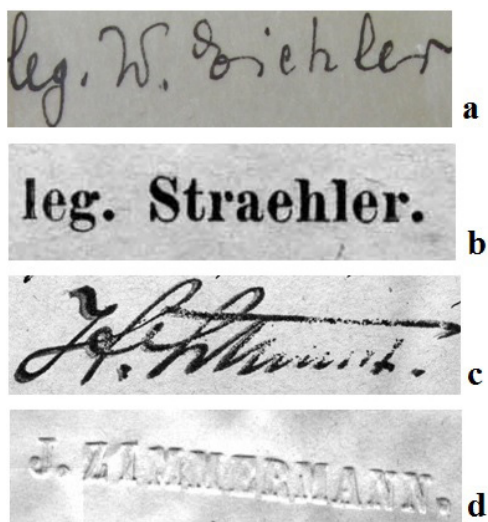


Fig. 1. Information about the person who included the exhibit in the collection may also be obtained from his or her handwritten signature (a), printed (b), stamped (c), or embossed (d). Photo T. Dobosz

⁹ Z. Fedorowicz, S. Feliksiak, *150-lecie Gabinetu Zoologicznego w Warszawie (1818–1968)*, “*Memorabilia Zoologica*” 2016, No. 1, pp. 1–202.

The material for the labels consisted mostly of plain white paper, wrapping paper, or cardboard. Some were made of a plastic or self-adhesive plaster. Occasionally labels were made of porcelain and metal, the latter only as numbers attached to specimens of weapons (Fig. 2). There were also improvised labels, for example fragments or entirely original wrappings. Figure 3 presents an improvised label completed by a police technician, attached to material evidence secured at a crime scene. Following a criminal trial, the court, at the request of the museum curator, forwarded this material evidence to the museum; the curator used the original card as a label. Regardless of the material used, the surface of the labels was usually original; rarely it was painted with a colourless varnish or hot-waxed. Sometimes information about the exhibit was an integral part thereof (for example, the etching of inscriptions on the base glass in the case of zoological preparations).



Fig. 2. Label material: white paper (a), wrapping paper (b), cardboard (c), plastic (d), self-adhesive plaster (e), porcelain (f), metal (g). From the collection of Museum of Natural History in Wrocław (b, c), Botanical Garden in Wrocław (f) and Forensic Medicine Museum in Wrocław (a, d, e, g) with the consent of the co-authors. Photo M. Halama, E. Lenard, T. Dobosz, A. Karpiewska

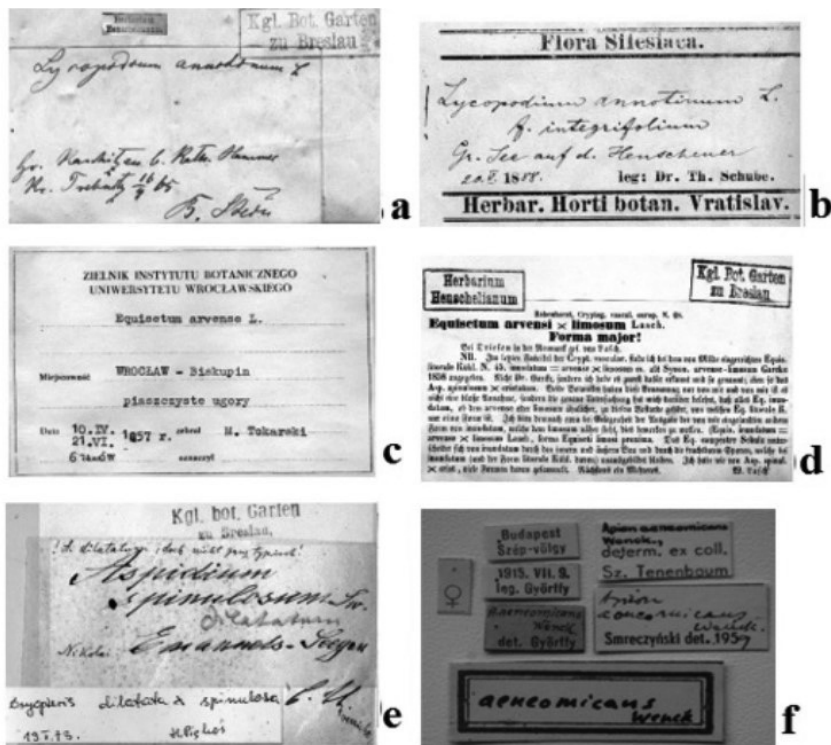


Fig. 3. An example of a material evidence card labels filled in by hand. Photo T. Dobosz

Labels were filled in by hand or by machine (printed labels were used in serial commercial production). Labels were then processed or corrected, or, in connection with examinations of the specimen, additional labels were added to the previous ones (Fig. 4). The problem of errors on labels is relatively well described in a number of papers.¹⁰

¹⁰ M.A. Rego, L. Moreira-Lima, L.F. Silveria, S. Frahnert, *On the ornithological collection of Friedrich Sellow in Brazil (1814–1831), with some considerations about the provenance of his specimens*, “Zootaxa” 2013, No. 3616, pp. 478–484; O. Wiig, L. Bachmann, *The mammal type specimens at the Natural History Museum, University of Oslo, Norway*, “Zootaxa” 2013, No. 3736, pp. 587–597; CA. Reid, M. Beatson, *Dismantling a taxonomic nightmare: A revision of the Australian, Indomalayan and Pacific species of Altica Geoffroy, 1762 (Coleoptera: Chrysomelidae: Gallerrucinae)*, “Zootaxa” 2015, No. 18 (4), pp. 503–551; G.S. Garbino, M.R. Nogueira, *On the mammals collected by Friedrich Sellow in Brazil and Uruguay (1814–1831), with special reference to the types and their provenance*, “Zootaxa” 2017, No. 17 (2), pp. 172–190.



Fig. 4. Methods of completing labels: handwritten (a, b), typewritten (c, d, g), reworked label (e), labels pasted to previous labels (f). From the collection of Museum and Institute of Zoology in Łomna (f), Museum of Natural History in Wrocław (a, b, c, d, e) and Forensic Medicine Museum in Wrocław (g) with the consent of the co-authors. Photo M. Halama, E. Lenard, T. Dobosz, P. Szymroszczyk

Over the 200 years of the analysed period, both the means used for manual writing and the pigments changed dramatically. From the beginning of the existence of scientific museology (which, it is believed, was created in the first half of the eighteenth century), until the end of the nineteenth century, writing was most often done with a goose-quill pen, or, in the case of German museum workers, a wooden stick, used in those times to

write in Schwabacher Font¹¹ (Fig. 5). Drawing ink and, less often, black, blue, or red writing inks were used as pigments. Unlike drawing inks, inscriptions made with writing ink were prone to fading or blotting. The use of a quill pen or stick as a writing instrument enabled relatively clear distinctions between the nineteenth and twentieth centuries in cases where the last two digits were used to note the year, for example '11.' The early twentieth century was an era of writing with a nib, pen, or ordinary or copying pencil (Fig. 5). From the middle of the last century onwards, almost all labels were made using a typewriter; other methods virtually disappeared. Increasingly, it can be observed that labels printed using inkjet and laser printers are not durable, hence so-called archival inks are sought and being tested for use. In the past, a small amount of chicken protein and graphite were added to ink for handwritten labels. It is also common to use acid-free paper or a specially prepared paper to enhance the durability of labels.



Fig. 5. Writing tools: pen (a), stick (b), nib (c), ballpoint pen (d), plain pencil (e), copying pencil (f). From the collection of Museum of Natural History in Wroclaw with the consent of the co-authors. Photo M. Halama, E. Lenard

¹¹ Y. Haralambous, *Typesetting Old German Fraktur, Schwabacher, Gotisch and Initials*, "Proceedings of TEX90" 1991, pp. 129–138.

In the case of descriptions of new species of fungi, plants, and animals, the manner of labelling specimens stored in collections results from specific provisions of the law. The International Code of the Nomenclature of algae, fungi, and plants regulates the scientific naming of these organisms, and the International Code of Zoological Nomenclature regulates all aspects related to giving and applying scientific names to living and extinct animals.¹² These documents include information on labelling methods and the use of data given on labels for so-called descriptive types, i.e. specimens on the basis of which a species description is made and a new name given. One of the basic duties of a researcher is the placement of a label with the designation ‘Holotype’ or ‘Holotypus’ (Fig. 6) identifying the typical specimen, meaning the ‘bearer’ of the name of a given species.

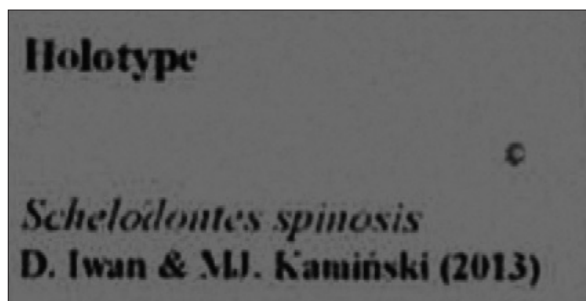


Fig. 6. Holotype label. From the collection of Museum and Institute of Zoology in Łomna with the consent of the co-authors. Photo P. Szymroszczyk

In museums, it very often happens that specimens are accompanied by notes made during the trapping or examination of a given exhibit. In the past, many researchers, wishing to provide more information about the deposited materials, attached notes to the collection. A given specimen provided with a label including an identifier (usually a consecutive notation number), having been placed in a display case or container, became part of a collection, and a notebook with notes was added to the relevant library. The separation of collections from the library or notes resulted in the loss of information about where, when, and by whom the specimen was taken; hence its scientific value, as well as, sometimes, its collection value, was reduced to nil. An example is Bishop Friedrich Kessel’s collection of beetles, which found its way to the Museum of Zoology of the Polish Academy of Sciences after the war. The species were numbered, and, fortunately, labels with data on the place and date of collection were also included (Fig. 7).

¹² *International Code of Zoological Nomenclature*, 1999, 4th edn. London, International Trust for Zoological Nomenclature, ICZN; *International Code of Nomenclature for algae, fungi, and plants* (Melbourne Code), 2012, Regnum Vegetabile 154, Koeltz Scientific Books.



Fig. 7. Examples of notes for labels in the collection of bishop F. Kessel. From the collection of Museum and Institute of Zoology in Łomna with the consent of the co-authors. Photo P. Szymroszczyk

Additional labels with numbers or abbreviations have been often attached to specimens in specialised collections, possibly referring to a method of maintenance. One example is a label from a collection of Lumbrycidae (earthworms), in which a card with the inscription AFG (a mixture of alcohol, formalin, and glycerol) was included in each container. This mixture was used especially for the preservation of these animals (Fig. 8). At the same time, evidence of published research could include indicators, for example numbers (2914) placed within the publication, enabling the precise identification of preserved specimens with published data. This is important for studies involving large numbers of materials.

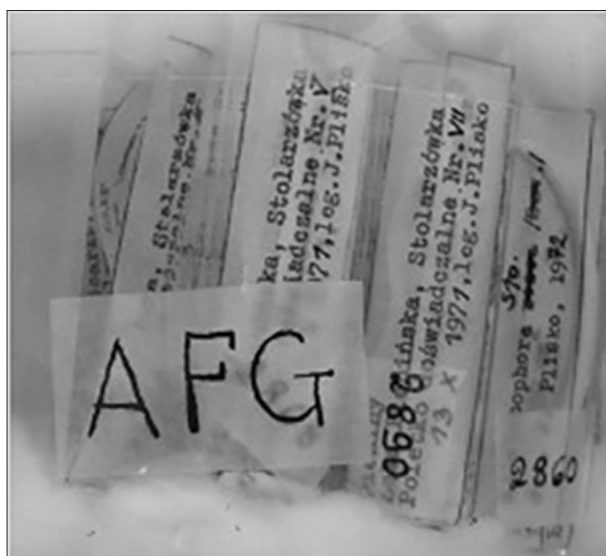


Fig. 8. Auxiliary label on the example of the Lumbrycidae collection. From the collection of Museum and Institute of Zoology in Łomna with the consent of the co-authors. Photo T. Dobosz

Discussion

The overall results of the review of labels are, in principle, consistent with a similar review conducted in 2012 at the Polish Geology Museum (Palaeontology section).¹³ Our team of authors, in the light of a series of publications and observed facts, altered its initially shared and still widespread view that the main function of labels is to provide information to visitors. For more than seventy years now, doubts have been expressed on this subject.¹⁴ It has been shown that, as McManus proved in 1989, that only 12.5% of visitors read the specifications of the exhibits; furthermore, the ability to read smoothly and quickly has been declining over succeeding generations.¹⁵ In 1991 Bitgood proved that labels containing more than 75 words are hardly read at all. Profound changes in the contents of labels were proposed in order to remedy this disturbing phenomenon. Conclusions resulting from the above-mentioned scientific papers, in the additional light of personal contacts of the authors of this work with museum visitors, now incline one towards the view that the main viewers of exhibits are not, as is commonly believed, visitors, but rather students of collections and future museum personnel, according to the Polish principle that one is a monk longer than he is an abbot. For this reason, we believe that the form of the label, although important, is less important than its content; that old labels, even those with errors, should be preserved, and that any changes should be made on subsequent versions of the labels attached to the old ones, without any alteration to the latter. It should be emphasised that inscriptions made with a plain soft pencil (not a copying pencil) are extremely durable (they do not fade in contact with air and light), do not blur in conditions of high humidity, and even perfectly withstand a very long bath in preservative liquids (information about its composition should be placed on the label).

This paper should not be folded and therefore its size should be adapted to the size of the exhibit. For this reason, it is regrettable that the occasional practice of enclosing a note with a pencil duplicate of an external label along with the preparation was not more widespread; if it had been, there would be no problems with the identification of the preparation in the case of the loss or complete illegibility of the label. In the opinion of the authors, each new, currently created preparation should be provided with an additional internal label of this kind, written in pencil. At the same time, it is worth considering that the above-mentioned method of coating with colourless varnish or hot paraffin is worthy of recommendation and becoming more widespread, because it protects the substrate against mould and mites and the inscription from fading, as well as ideally protecting the label from dust and moisture, despite the initial reduced readability of the label.

The greatest interest of the authors of this work was aroused by two types of experimental label, using two-dimensional barcodes or a radio tag (Fig. 9). The first type, despite the extremely high level of compression of information within a small space and

¹³ E. Krzeszowska, I. Machłajewska, *Odkrywanie historii zbiorów muzeum geologii złóż w Gliwicach – śladami niektórych metryczek okazów paleontologicznych*, "Górnictwo i Geologia" 2012, No. 7 (3), pp. 47–56.

¹⁴ G. Weiner, *Why Johnny can't read labels*, "Curator" 1963, No. 6 (2), pp. 143–156.

¹⁵ P.M. McManus, *Oh, yes, they do: How museum visitors read labels and interact with exhibit texts curator*, "The Museum Journal" 1989, No. 32 (3), pp. 174–189; S. Bitgood, *The ABCs of Label Design...*, pp. 115–119.

easy legibility of content on a smartphone screen once the code has been scanned, raises the authors' doubts as to the readability of dirty or damaged code and the availability of readers after a long time has passed. The second type, currently used in retailing, despite similar doubts concerning legibility in future, seems very promising at the moment, because it can be used to trigger an audiovisual commentary on the viewer's smartphone. Only time will tell whether the use of either type of new tag will become widespread.

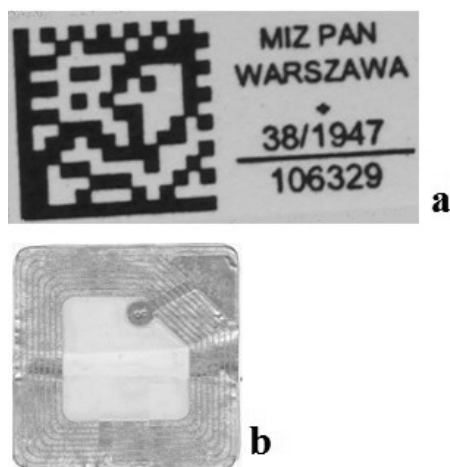


Fig. 9. Two-dimensional barcodes (a), radio tags (b). From the collection of Museum and Institute of Zoology in Łomna and Forensic Medicine Museum in Wrocław (b) with the consent of the co-authors. Photo P. Szymroszczyk, T. Dobosz

Finally, an additional comment, which serves as a preview for a subsequent study, with no direct connection to the problem of museum labels discussed here: old, used, darkened, or opaque preservative fluids are generally not appreciated by conservators. The authors of this work believe that they constitute a valuable source, safe for preparations, of genetic material diffused from dead tissue, and therefore they only should be replenished. However, they can be decolourised using charcoal and clarified via filtration or a centrifuge. The postulated complete change of preservative fluid without a clear, unambiguous necessity dramatically reduces the potential for non-destructive genetic testing of the exhibit.¹⁶

¹⁶ S. Konwerski, J. Błoszyk, *Zbiory przyrodnicze Wydziału Biologii Uniwersytetu im. Adama Mickiewicza w Poznaniu – struktura i funkcjonowanie*, “Opuscula Musealia” 2013, Vol. 21, pp. 137–144.

Bibliography

- Bitgood S., *The ABCs of Label Design*, "Visitor Studies" 1991, No. 3 (1), pp. 115–119. Bitgood S., *Deadly sins revisited: A review of the exhibit labels literature*, "Visitors Behavior" 1989, No. 4 (3), pp. 4–11.
- Ceglia F.P. de, *The importance of being Florentine: A journey around the world for wax anatomical Venuses*, "Nuncius" 2011, No. 26 (1), pp. 83–108.
- Drobnik J., *Zielnik i zielnikoznawstwo*, Warszawa 1992.
- Fedorowicz Z., Feliksiak S., *150-lecie Gabinetu Zoologicznego w Warszawie (1818–1968)*, "Memorabilia Zoologica" 2016, No. 1, pp. 1–202.
- Garbino G.S., Nogueira M.R., *On the mammals collected by Friedrich Sellow in Brazil and Uruguay (1814–1831), with special reference to the types and their provenance*, "Zootaxa" 2017, No. 17 (2), pp. 172–190.
- Haralambous Y., *Typesetting, Old German Fraktur, Schwabacher, Gotisch and Initials*, "Proceedings of TEX90" 1991, pp. 129–138.
- The herbarium handbook: Royal Botanic Gardens*, ed. D. Bridson, L. Forman, Kew 1992.
- Hicks A.J., Hicks P.H., *A selected bibliography of plant collection and herbarium curation*, "Taxon" 1978, No. 27 (1), pp. 63–99.
- Hosenally F., Vanmuylder N., Louryan S., *The dental collection Hyacinthe Brabant: A pedagogic and scientific tool*, "Morphologie" 2016, No. 100 (328), pp. 24–35.
- Hudson L.N. et al., *Insect: Automating the digitalization of Natural History Collections*, "PLoS One" 2015, No. 10 (11), pp. 1–15.
- International Code of Zoological Nomenclature*, 1999, 4th ed. London, International Trust for Zoological Nomenclature, ICZN; *International Code of Nomenclature for algae, fungi, and plants (Melbourne Code)*, 2012, Regnum Vegetabile 154, Koeltz Scientific Books.
- Jain S.K., *A handbook of field and herbarium methods*, New Delhi 1977.
- Konwerski S., Błoszyk J., *Zbiory przyrodnicze Wydziału Biologii Uniwersytetu im. Adama Mickiewicza w Poznaniu – struktura i funkcjonowanie*, "Opuscula Musealia" 2013, Vol. 21, pp. 137–144.
- Krzyszowska E., Machłajewska I., *Odkrywanie historii zbiorów muzeum geologii złóż w Gliwicach – śladami niektórych metryczek okazów paleontologicznych*, "Górnictwo i Geologia" 2012, No. 7 (3), pp. 47–56.
- McManus P.M., *Oh, yes, they do: How museum visitors read labels and interact with exhibit texts curator*, "The Museum Journal" 1989, No. 32 (3), pp. 174–189.
- Mulieri P.R. et al., *The type specimens of Tachinidae (Diptera) housed in the Museo Argentino do Ciencias Naturales*, "Bernardino Rivadavia", Buenos Aires, "Zootaxa" 2013, No. 3670, pp. 157–176.
- Patitucci L.D. et al., *The type specimens of Calyptrate (Diptera) housed in non-traditional institutions in Argentina*, "Zootaxa" 3025, No. 3905 (4), pp. 557–572.
- Rego M.A., Moreira-Lima L., Silveria L.F., Frahnert S., *On the ornithological collection of Friedrich Sellow in Brazil (1814–1831), with some considerations about the provenance of his specimens*, "Zootaxa" 2013, No. 3616, pp. 478–484.
- Reid C.A., Beatson M., *Disentangling a taxonomic nightmare: A revision of the Australian, Indo-malayan and Pacific species of Altica Geoffroy, 1762 (Coleoptera: Chrysomelidae: Galerruciinae)*, "Zootaxa" 2015, No. 18 (4), pp. 503–551.
- Salvador A., Pickering J., *Type catalogue of Terebridae (Mollusca, Gastropoda, Conoidea) in the Natural History Museum, London, UK*, "Zootaxa" 2017, No. 4250(2), pp. 101–142.
- Screven C.G., *Exhibition and information centers: Some principles and approaches*, "Curator" 1986, No. 29 (2), pp. 109–137.

- Screven C.G., *Motivating visitors to read labels*, "ILVS Review" 1992, No. 2 (2), pp. 183–211.
- Skvortsov A.K., *The herbarium: Handbook of methods and techniques*, Moscow 1977.
- Svenson G.J., *Revision of the Neotropical bark mantis genus Liturgosa Saussure, 1869 (Insecta, Mantodea, Liturgosini)*, "ZooKeys" 2014, No. 390, pp. 1–214.
- Svenson G.J., *The type material of Mantodea (praying mantises) deposited in the National Museum of Natural History, Smithsonian Institution, USA*, "ZooKeys" 2014, No. 433, pp. 31–75.
- Vissers J. *et al.*, *Scientific user requirements for a herbarium data portal*, "PhytoKeys" 2017, No. 78, pp. 37–57.
- Weiner G., *Why Johnny can't read labels*, "Curator" 1963, No. 6 (2), pp. 143–156.
- Wiig O., L. Bachmann L., *The mammal type specimens at the Natural History Museum*, University of Oslo, Norway, "Zootaxa" 2013, No. 3736, pp. 587–597.
- Womersley J.S., *Manual for plant collecting and herbarium development*, "FAO, Field Doc." 1980, No. 23, pp. 1–147.

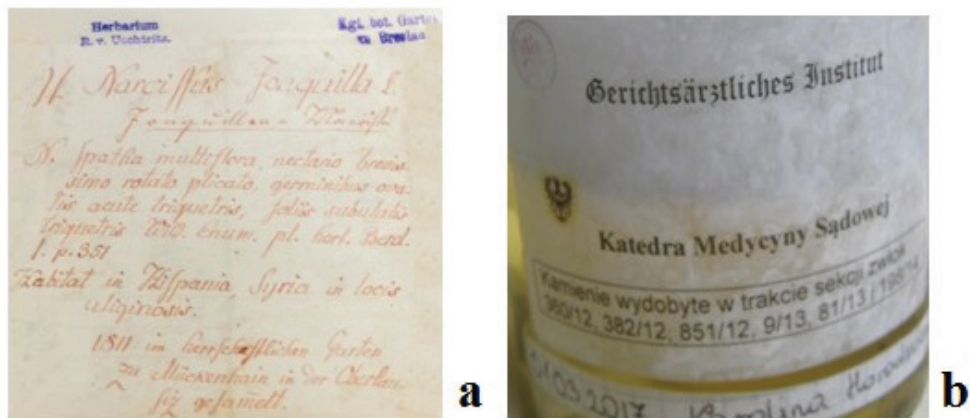


Fig. I. The oldest (a) and newest (b) analysed museum labels. From the collection of the Museum of Natural History in Wrocław (a) and Forensic Medicine Museum in Wrocław (b) with the consent of the co-authors. Photo M. Halama, E. Lenard, T. Dobosz

MUZEUM ZOOLOGII PAN W WARSZAWIE

Ennychiatus fitzsimonsi Koch

Catalogue number 312

South Africa, Cape-Karoo, Farm Zwartskraal, 33.10s-22.32E, 550 m

Ground trap, 50 days, meat bait

9 August 1999, 16.50

Leg. M. Sulma

Fig. II. 'Universal label' with complete information about an exhibit from the point of view of managing and assuring the accessibility of the relevant collection. Photo T. Dobosz



Fig. III. Designation of the owner of the collection: printed (a) stamped (b) handwritten (c) including a change of owners (d) information about the donor (e). From the collection of the Museum of Natural History in Wrocław (b, d) and Forensic Medicine Museum in Wrocław (a, c, e) with the consent of the co-authors. Photo M. Halama, E. Lenard, T. Dobosz

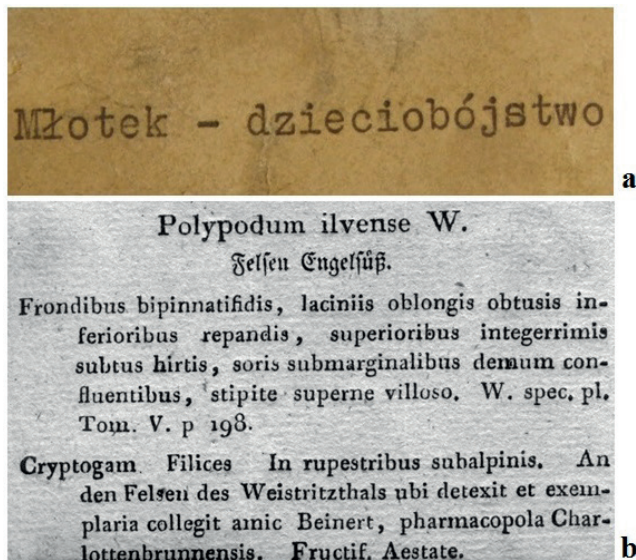


Fig. IV. Name of the exhibit: laconic (a) and developed (b). From the collection of Forensic Medicine Museum in Wrocław (a) and the Museum of Natural History in Wrocław (b) with the consent of the co-authors. Photo M. Halama, E. Lenard, T. Dobosz

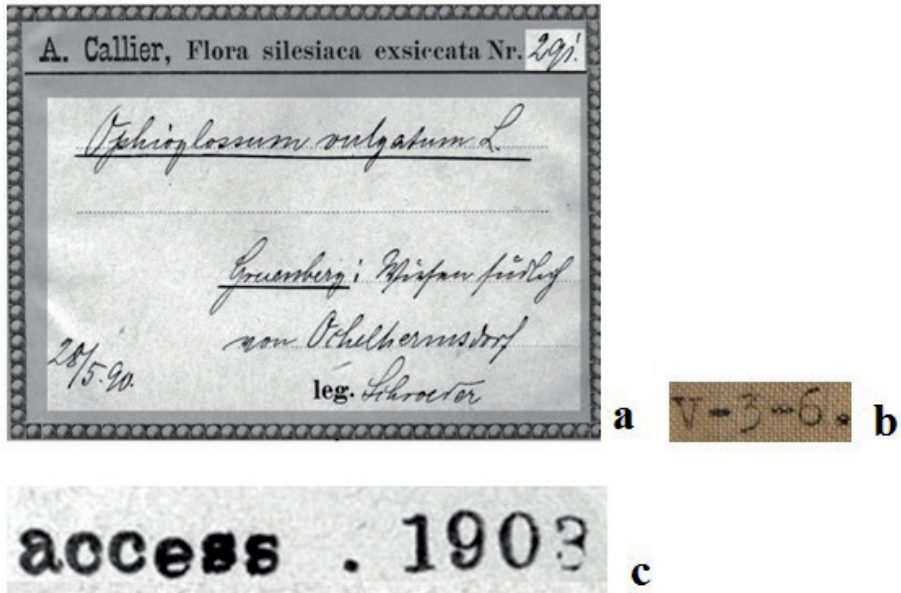


Fig. V. Inventory number on the label (a, b) date of inclusion in the collection (c). From the collection of the Museum of Natural History (a) and Forensic Medicine Museum in Wrocław (b, c) with the consent of the co-authors. Photo M. Halama, E. Lenard, T. Dobosz

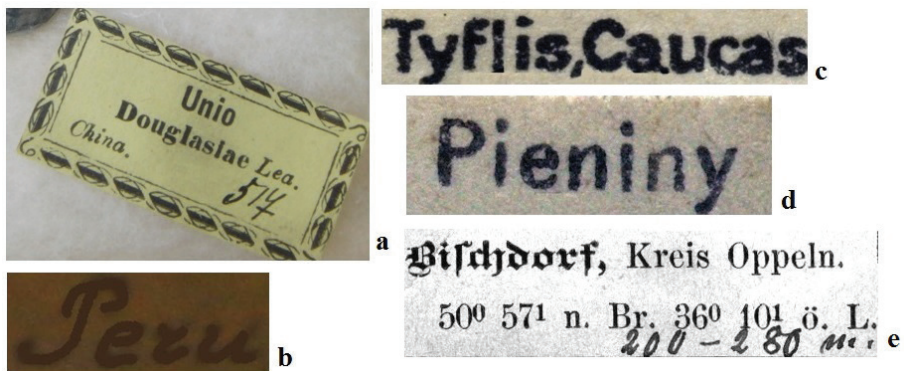


Fig. VI. Precision of the description of the place of origin of the exhibit, within an area of: over 9.5 mln km² (a), almost 1.3 mln km² (b), about 700 km² (c), about 200 km² (d), about 1 km² (e). From the collection of Museum and Institute of Zoology in Łomna (a, b, c, d) and Museum of Natural History in Wrocław (e) with the consent of the co-authors. Photo T. Dobosz, P. Szymroszczyk

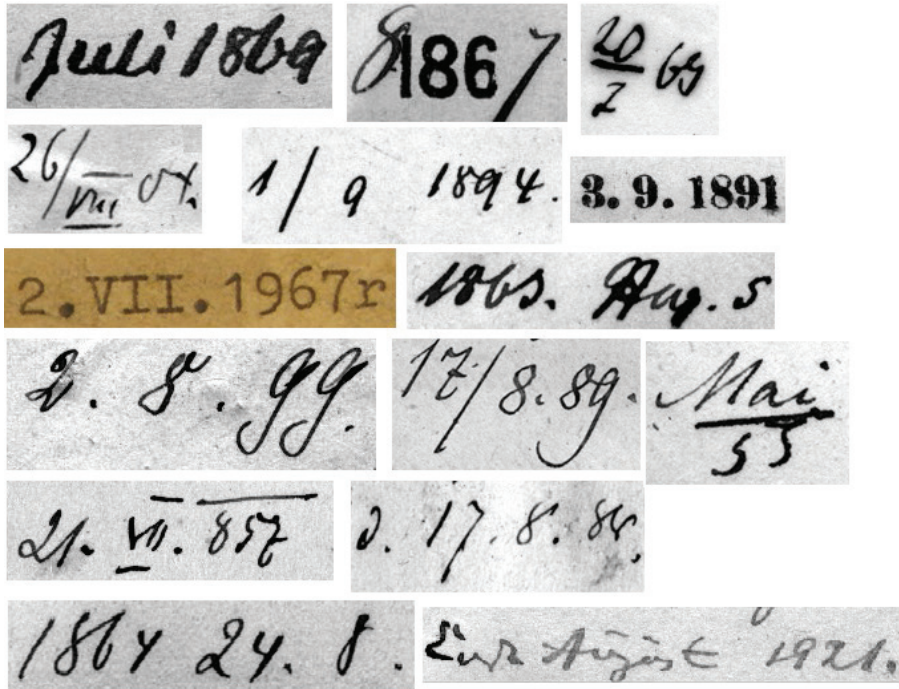


Fig. VII. Examples of different data entry systems. Photo T. Dobosz

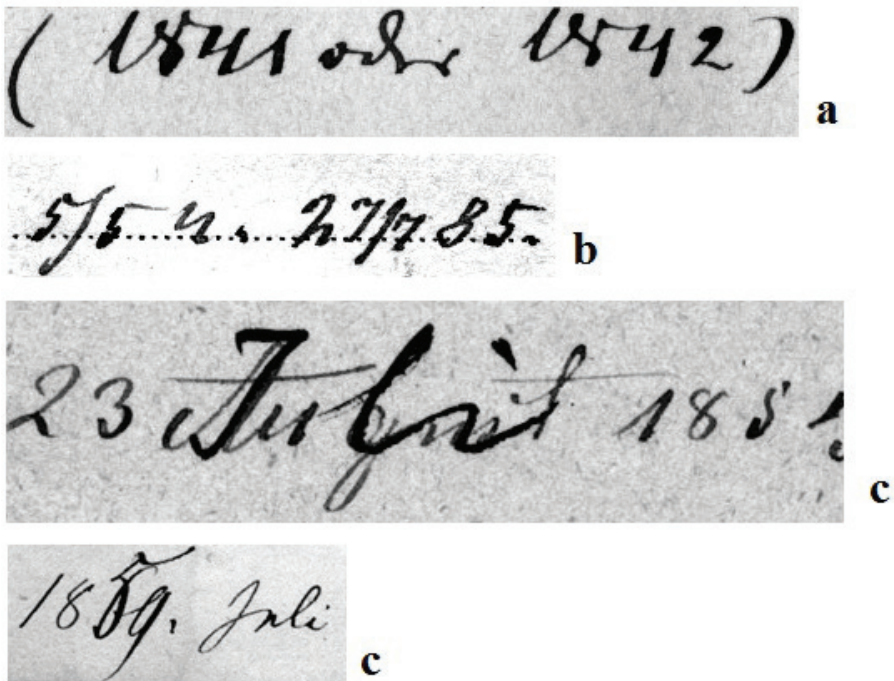


Fig. VIII. Precision of dating: approximate dating (a), precise dating (b), corrected date (c). Photo T. Dobosz