Module

Common problems in zoological nomenclature

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Casus 1 - Synonyms

You suspect that two different names are used for the same species…

Q: How do you establish which of the names is correct?

A: *Step 1:* establish if the different names really do apply to the same species by consulting the original description and do also try to examine the type(s)

Step 2: 'the oldest fool is always right'; so the senior synonym becomes the correct species name, if…

Step 3: the senior synonym is an available name; if not take the next available synonym

Casus 2 – Availability

In the literature you find a species name that you have never heard of before…

Q: How can you know if that species name is available?

A: Use the criteria of availability as stipulated in the Code (cf Chapter 4). The main conditions are:

- Binomial – a name must have been published in a consistently binomial work
- Properly published after 1757 (e.g. multiple copies)
- Mandatory use of Latin alphabet; forming a word
- Name must be used as valid for a taxon when proposed
- Name must be accompanied by a description or definition or indication of the taxon it denotes
- After 1999 all new names must be explicitly indicated as intentionally new (e.g. fam. nov., gen. nov., sp. nov, nom. nov.)

Example1:

Chemnitz (1780) published the name *Conus moluccensis*. Is the name available?

. Yes because it's binomial in structure
. Yes because it's properly published
. Yes because it uses the Latin alphabet
. Yes because it's published as valid
. **No** because Chemnitz (1780) work is not consistently binominal in structure

Q: Can I know if a work is not consistently binominal even if I don't have the (often rare) work in my possession?

A: **No you need to find a copy and verify!**

Note however: rejected and invalid works in zoological nomenclature are listed in an official index! (Melville & Smith, 1987 & Smith 2001)

Example2:

Internet gives the following synonymy list for this species

***Bothrops alternatus* Duméril, Bibron & Duméril, 1854**

Craspedocephalus brasiliensis Gray, 1849 Nomen nudum
Bothrops alternatus Duméril, Bibron & Duméril, 1854
Lachesis alternatus (Duméril, Bibron & Duméril, 1854)
Lachesis inaequalis Magalhães, 1925
Trigonocephalus alternatus (Duméril, Bibron & Duméril, 1854)
Trimeresurus alternatus (Duméril, Bibron & Duméril, 1854)

Q1: Why isn't the oldest name the valid one?

A1: It's a nomen nudum; thus *ipso facto* unavailable

Q2: Is *Lachesis inaequalis* Magalhães, 1925 a junior or senior synonym?

A2: Junior, it's the youngest name

Q3: Which principle of the Code do you need to decide?

A3: Principle of priority! The first available name must be used unless it is invalidated by the rules of the ICZN

Example3:

Cherbonnier, a reknown French taxonomist, utilises the name *Polycheira fusca* (Quoy & Gaimard, 1833) for this species → However in a ruling of the ICZN the name *fusca* Quoy & Gaimard, 1833 as published in the binomen *Fistularia fusca* was suppressed for the purpose of the law of priority (Opinion 762, 1966). Cherbonnier, argues that, as the type still exists (and thus, that the name can be stablized), he can still use the name in the genus *Polycheira*

Q1: Is it justified to use a suppressed specific name in another combination (here *Polycheira fusca*)?

A1: No, a species name that is suppressed remains unavailable unless there's another ruling

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Subject: opinion 762
From: Yves Samyn <Yves.Samyn@naturalsciences.be>
Date: 14/06/2006 11:18
To: iczn@nhm.ac.uk
Cc: Didier VandenSpiegel, Claude Massin, cbd-gtiBelgium

Dear Dr Polaszek,

Sorry for the disturbance, but my colleagues and I are faced with a small nomenclatural question which we think the Commission can reply to with just 'yes' or 'no'.

Here's the case (Echinodermata: Holothuroidea: Apodida; Chiridotidae).

The name *fusca* Quoy & Gaimard, 1833, as published in the binomen *Fistularia fusca* was suppressed for the purposes of the Law of Priority but not for those of the Law of Homonymy in Opinion 762 (1966).

Subsequent authors have however continued to use the name *fusca* Quoy & Gaimard, 1833 in another genus (*Polycheira*) giving the name *Polycheira fusca* (Quoy & Gaimard, 1833).

Can you confirm us that this cannot be done, unless there's a new ruling by the Commission?

We would be using the oldest subjective synonym available; here: *Polycheira rufescens* (Brandt, 1835)

This is important for us as we are establishing a new series (called *AbcTaxa*) devoted to capacity building in taxonomy and collection management. As we want to show only 'good practices' in taxonomy, you'll understand that we don't want to sin against the nomenclatural rules.

My colleagues and I thank you in advance for your insight and your precious time.

Yours sincerely,

Dr Yves Samyn

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Subject: opinion 762
From: ICZN-AP <ICZN-AP@nhm.ac.uk>
Date: 15/06/2006 11:52
To: 'Yves Samyn'

Dear Yves,

You are quite correct on all points. It is the specific name that is suppressed, with the author(s) and date, as they appear in the particular combination cited. So it it not the combination being suppressed, but the specific name. Citing the suppressed specific name in another combination is therefore not allowed by the Code. The next available synonym should be used, as you correctly suggest.

Many thanks for taking the trouble to confirm your opinion on this matter. If all editors were this conscientious we would be faced with far fewer problems in animal nomenclature.

Best wishes, Andrew.

Dr Andrew Polaszek
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Casus 3 – Priority

You have discovered two subjective synonyms published in the same year …

Q1: Which is the senior – to be used - name?

A1: If one name was proposed at a higher rank than the other, then the highest rank automatically has precedence

Example

vulgaris Schmidt & *sinensis* Chang are proposed in the same year; *sinensis,* proposed for a species takes precedence over *vulgaris* because the latter was proposed for a subspecies

A2: If ranking cannot be used, 'Determination by the First Reviser' counts

Example

Strix scandiaca Linnaeus, 1758 & S. *nyctea* Linnaeus, 1758 are considered subjective synonyms. Lönnberg (1931), as first revisor, gave precedence to *Strix scandiaca*

Casus 4 – Homonymy

Which of the two primary homonyms is valid?

Example:

***Cerithium morus* Lamarck, 1822**

***Cerithium morus* Brugière 1792**

→ **The oldest: *Cerithium morus* Brugière 1792**

Casus 4 – Homonymy

Which of the two primary homonyms is valid?
How can the youngest be cited?

Example:

Cerithium morus **Lamarck, 1822**

Cerithium morus **Brugière 1792**

→ ***Cerithium morus*** **Lamarck, non Brugière 1792**

Casus 4 – Homonymy

Which of the two primary homonyms is valid?
How can the youngest be cited?
How can the youngest get his valid name?

Example:

Cerithium morus **Lamarck, 1822**

Cerithium morus **Brugière 1792**

→ **The first available synonym: *Cerithium albifasciatum* Sowerby, 1855**

Casus 5 – replacement names

What to do if there's no name to replace a homonym?

Example:

Parathyone Deichmann, 1957

↓

P. surinamensis Semper, 1868
P. suspecta Ludwig, 1875

Parathyone Cherbonnier, 1988

↓

P. incurvata Cherbonnier, 1988

↓

Ekmanothyone nom. nov
Ekmanothyone incurvata (Cherbonnier, 1988)

Casus 6 – interpreting synonymy lists

Example 1 (Wouters, 1962):

Hermanites excancellata (Neviani, 1928)

1878 Cythere macropora, BOSQUET. – BRADY, Antwerp Crag, p. 392-393; pl. 67, fig. 1a-1d; pl. 66, fig 6a-6d (non BOSQUET) (pars).

1894 Cythere cancellata LIENENKLAUS. - LINENKLAUS, Tertiär N.W. – Deutschl., p. 204-205; pl. 14, fig. 5a-5b.

1918 Cythereis cancellata LIENENKLAUS. –KUIPER, Oligo-Miocän Niederl, p. 60-62; pl. 3, fig. 25a-25b.

1928 Cythereis excancellata n.n. – NEVIANI, Vallebiaja, p. 91-93 (nomen novum pro Cythere cancellata LIENENKLAUS, 1894, non Cythere cancellata BRADY, 1868)

1962 Cythereis excancellata NEVIANI. – RUGGIERI, Suddivisione, p. 167.

1962 Quadracythere excancellata (NEVIANI, 1928). – BASSIOUNI, Mittelmiozän N.W..-Deutschland., p. 26-28; pl. 3, fig. 1-3.

1963 Hermanites excancellata (NEVIANI, 1928). – MORKHOVEN, Post-Paleozoic Ostr., II, p. 205.

Casus 6 – interpreting synonymy lists

Example 2 (Massin, unpublished):

Holothuria (Mertensiothuria) hilla Lesson, 1830

Holothuria(Fistularia) hilla Lesson, 1830: 226, pl. 78;

Holothuria hilla; Cherbonnier, 1951: 532, fig. 1; Tortonese, 1953: 42, fig. 5; Cherbonnier, 1955: 153, pl. 32, fig. g-r; Macnae & Kalk, 1958: 36ss; Kalk, 1958: 213ss; Kalk, 1959: 7, 22; Macnae & Kalk, 1962 104ss; James, 1969: 62; Cherbonnier, 1963: 5; Cherbonnier, 1966: 56; Nagabhushanam & Rao, 1972: 290; Lawrence, 1980: 202; Grosenbaugh, 1981: 51; Branch & Branch, 1981: 249; Kropp, 1982: 446, 449; James, 1983: 98; James, 1983: 93; James, 1988: 404; Zoutendijk, 1989: 2; Colin & Arneson, 1995: 262, fig. 1234 (colour plate); James, 1995: 273; Weinberg, 1997: 246 (colour plate); Solis-Marin et al., 1997: 256; Hickman, 1998: 47 (colour plate); Lioa, 1998: 80; Kerr et al., 1998: 786; Conand, 1999: 10ss; Baine & Forbes, 1998: 4; Zulfigar & Tan Shau Hwai, 1999: 76; Roberts et al., 2000: 264, fig. 3d; James 2001: 7, fig. 15, (B/W photo); Zulfigar et al., 2001: 364; Conand & Mangion 2002: 28.

Holothuria (Holothuria) hilla; Vandenspiegel & Jangoux, 1989: 225.

...

Holothuria (Thymiosycia) hilla; Rowe, 1969: 147; Clark & Rowe, 1971: 178, pl. 28, fig. 9; A.M. Clark & Taylor, 1971: 91; Liao, 1975: 214; Rowe & Doty, 1977: 232, figs 4b, 8b; Levin, 1979: 22; Sloan et al., 1979: 123; Levin, 1980: 53; Liao, 1980, 115; Mary Bai, 1980: 13, textfig. 9I; Tortonese, 1980: 107; Humphreys, 1981: 35; Price, 1981: 9; Price, 1982: 11; fig. 51a-d'; Mukhopadhyay & Samanta, 1983: 307, fig. 8A-C; Price, 1983: 93; Rowe, 1983: 158; Leonardo & Cowan, 1984: 38, textfig; .Reyes-Leonardo, 1984a: 147, pl. 4 fig. 2a-f; Liao, 1984: 222; A.M. Clark, 1984: 99; Conand & Chaudry, 1985: 295; Richard, 1985: 457; James, 1985 [1988]: 404; Price & Reid, 1985: 6; Marsh, 1986: 73; Cannon & Silver, 1986: 25, fig. 7e, textfig.; Féral & Cherbonnier, 1986: 92 (colour plate); Cutress & Rowe, 1987: 267, figs 2c, 6^{e}; George & George, 1987: 247; Cherbonnier, 1988: 85, fig. 34A-L; Mukhopadhyay, 1988: 8, fig. 7a-b1; Jangoux et al., 1989: 163; Conand, 1989: 28; Chao & Chang, 1989: 118, figs 17, 30D; Pauley, 1989: 27; James, 1989: 126; Levin & Dao Tan Ho, 1989: 57; Imaoka, 1991: 178, fig. 3A-D; James, 1991: 23; Mukhopadhyay, 1991: 407; Kerr et al., 1993: 782ss; Marsh et al., 1993: 64; Kerr, 1994: 169; Marsh, 1994a: 11; Marsh, 1994b: 57; Rowe & Gates, 1995: 302; Liao & A.M. Clark, 1995: 463, fig. 276a-d; James, 1995a: 59, pl. 1D, fig. 2G-H; Pawson, 1995: 189; Massin, 1996b: 30, fig. 20A-G; Gosliner et al., 1996: 280, fig. 1032 (colour plate); Liao, 1997: 141, fig. 83a-d; Rowe & Richmond, 1997: 304 (colour drawing); Liao, 1998: 80; Erhardt & Beansch, 1998: 1084 (colour plate); Forbes et al., 1999; 42, textfig + colour plate + map; Bussarawit & Thongtham, 1999: 35 ; Massin, 1999: 55 figs 44 (map), 11D (colour plate); Samyn, 2000: 15; Lane et al., 2000: 489; Samyn & Vanden Berghe, 2000: 28; Schoppe, 2000: 113, colour plate; Putchakarn & Sonchaeng, 2004: 426; Sastry et al., 2004: 64; James, 2004: 123; Marsh & Morrison, 204: 303, 339; Thandar & Samyn, 2004: 255: Kumara et al., 2005: 25; Solis-Marin et al., 2005: 133; Sastry, 2005: 110.

Holothuria (Mertensiothuria) hilla; Samyn & Massin, 2003: 2500, figs 5A-E, 11C, 12F (colour plate); Samyn, 2003: 45, fig. 53A (map); Rowe & Richmond, 2004: 3301; Samyn et al., 2005: 15.

Psolus monacaria Lesson, 1830: 225, fig. 78.

…

Holothuria monacaria; Selenka, 1867: 331; Semper, 1868: 78, 276; Semper,1869: 120; Ludwig, 1882: 134; Ludwig, 1883; 155, 165; Lampert, 1885: 72; Théel, 1886: 172, 217, pl. 8, fig. 10; Sluiter, 1887: 189; Bell, 1887: 140; Ludwig, 1887: 1224; Ludwig, 1888: 806; Bell, 1888: 385; Lampert, 1889: 808; Ludwig, 1889-92: 330; Thurston, 1890: xxx; Sluiter, 1894: 103; Thurston, 1895: 115; Koehler, 1895: 381;Koehler, 1885: 281; Sluiter, 1895: 77; Lampert, 1896: 54; Bedford, 1898: 841; Bedford, 1899: 146; Ludwig, 1899: 557; Sluiter, 1901: 11; Pearson, 1903: 201; Fisher, 1907: 659; Koehler & Vaney, 1908: 11; Clark, 1908: 310; Bedot, 1909: 160; Pearson, 1910: 180; Mitsukuri, 1912: 112; Pearson, 1913: 71, pl. 10, fig. 13; Ohshima, 1915: 216; Erwe, 1919: 182, fig. 2; Clark, 1920: 150; Clark, 1921: 180; Clark, 1923: 163; Clark, 1925: 103; Gravely, 1927: 164; Clark, 1932: 233; Domantay, 1933: 67, pl. 1, fig. 10; Engel, 1933: 9, pl. 1, fig. 3, textfig. 9-10; Panning, 1935: fig. 10e; Tortonese, 1936: 234; Sérène, 1937: 26; Clark, 1938: 526, pl. 16, fig. 17; Clark, 1946: 436; Dawydoff, 1952: 117; Endean, 1953: 57; Endean, 1956: 131; Endean, 1957: 253; Chang & Liao, 1964: 40, figs 1-2; Clark & Davies, 1966: 600; Clark & Rowe, 1967: 126; James, 1969: 62; Townsley & Townsley, 1972: 176: Daniel & Halder, 1974: 428; Rho & Shin, 1986: 247, pl. 1, figs 1-11; Satyamurti, 1976: 47, James, 1988: 404; Verbist, 1993: 116; Rho & Won, 1995: 345.

Holothuria monacaria viridis ; Clark, 1938 : 527

Holothuria (Holothuria) monacaria; Panning, 1935b: 69, fig. 47a-u; Domantay, 1936: 398, pl. 6, fig. 67.

Thelenota monacaria ; Brandt, 1835 : 55.

Stichopus monacaria ; Selenka, 1868 : 117.

Holothuria flammea Quoy & Gaimard, 1833 : 117, pl. 6, figs 5-6.

Stichopus flammeus ; Brandt, 1835 : 73 ; Selenka, 1867 : 320.

Stichopus gyrifer Selenka, 1867 : 319.

…

Holothuria gyrifer ; Deichmann, 1937 : 371 ; Domantay, 1954 : 345.

Brandtothuria gyrifer ; Deichmann, 1958 : 294, pl. 1, figs 16-18.

Holothuria (Thymiosycia) gyrifer ; Rowe, 1969 : 147.

Labidodemas leucopus Haacke, 1880 : 46.

Labidodemas neglectum Haacke, 1880 : 48.

Holothuria decorata von Marenzeller, 1881 : 137, pl. 4, fig. 12 ; Ludwig, 1882 : 135 ; Ludwig, 1883 : 116 ; Théel, 1886 : 218 ; Ludwig, 1887 : 2 ; Ludwig, 1889-92 : 330 ; Mitsukuri, 1896 : 407 ; Bedford, 1899 : 146 ; Jangoux & De Ridder, 1990 : 207 ; .

Holothuria (Thymiosycia) decorata ; Imaoka, 1991 : 174, figs 1A-H, 2A-G

Holothuria (Thymiosycia) decorata var *quattuoricava* Imaoka, 1991 : 180, figs 1A-J, 2A-J, 3A-B

Holothuria isuga Mitsukuri, 1912 : 87, textfig 18a-f.

Holothuria macleari Bell, 1884 : 152, pl. 9, fig. G ; Clark, 1909 : 560 ; Mitsukuri, 1912 : 98, textfig. 20 ; Daniel & Halder, 1974 : 423

Holothuria minax Théel, 1886 : 173, pl. 8, fig. 8 ; Ludwig, 1889-92 : 330 ; Mitsukuri, 1896 : 408 ; Ekman, 1926 : 452, fig. A©.

Holothuria ondaatjei Bell, 1887 : 654.

Holothuria fasciola Quoy & Gaimard, 1833 : 133 ; Brandt, 1835 : 74 ; Selenka, 1867 : 341.

Holothuria fusco-punctata Quoy & Gaimard, 1833 : 132; Brandt, 1835 : 75 ; Daniel & Halder, 1974 : 417.

Holothuria umbrina Rüppell & Leuckart, 1828 : 10, pl. 2, fig. 4a-b ; Panning,1951 : 171, figs 1-7.

Holothuria zihuatanensis Caso, 1964 : 107, pls 1 (1-10), 2(1-13), 3, textfig 1-2 ; Caso, 1976 : figs 45-47.

Stichopus (Holothuria) patagonicus Perrier, 1904 : 13 ; Perrier, 1905 : 11, pl. 1, figs 1-3/

State of the art Synonymies

***Holothuria (Mertensiothuria) hilla* Lesson, 1830**

Holothuria decorata Marenzeller, 1882
Holothuria fasciola Quoy & Gaimard, 1833
Holothuria flammea Quoy & Gaimard, 1833
Stichopus flammeus Brandt, 1835
Holothuria fuscopunctata Quoy & Gaimard, 1833
Stichopus gyrifer Selenka, 1867
Labidodemas leucopus Haacke, 1880
Holothuria macleari Bell, 1884
Holothuria minax Théel, 1886
Holothuria monacaria Lesson, 1830
Labidodemas neglectum Haacke, 1880
Holothuria ondaatjei Bell, 1887
Holothuria umbrina Rüppell & Leuckart, 1828
Holothuria zihuatanensis Caso, 1964

e.g. Holothuria:

430 nomina; only some 165 valid

Casus 7 – types

You find that a name is represented by syntypes and that these are deposited in different collections…

Q1: What can you do to stabilize the name?

A1: Designate one of the syntypes as a lectotype so that this specimen becomes the unique name-bearer of the nominal species group taxon (art 74.1)

Q2: What status do the remaining syntypes get?

A2: Paralectotypes, which are no longer name-bearers

Q3: Which specimen to choose as the lectotype?

A3: The one that has been described is recommended

Example (Gutiérrez, 1995):

Bolívar (1888) described *Pseudosymploce excisa* from specimens (syntypes) deposited in the Gundlach collection (IES) and MNCN (Madrid).

After collections comparison with the Bolívar original description, the male specimen in Gundlach collection was designated as lectotype, the specimens in Madrid thus automatically became paralectotypes

P. excisa, wild endemic cockroach from Guantánamo mountains, Cuba

Example (Gutiérrez, in prep)
Where is the type?

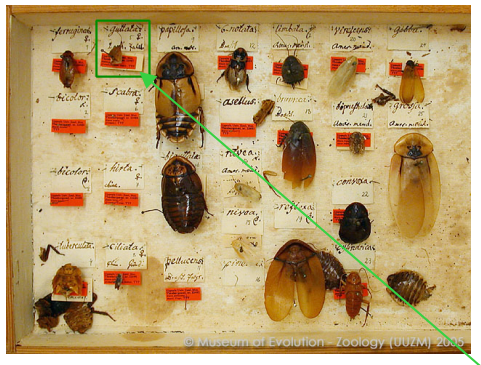
Blatta guttata Thunberg, 1810 (St. Barthelemy, Guadalupe) is listed and considered a member of the genus *Eurycotis* by some authors (Rehn & Hebard, 1927; Gurney, 1942; Princis, 1969) only from its original diagnosis:

“Ferruginea abdominis incifuris macula marginali flava”

With the study of Thunberg collection in Sweden it is defined that:

-*B. guttata* is not an *Eurycotis*

-It is a different genus, family and it is a Juvenile!!!



Casus 7 – types

Taxonomic study reveals that a name-bearing type is unidentifiable (i.e. it is a *nomen dubium*)…

Nomen dubium: A Latin term meaning ¨a name of unknown or doubtful application ¨

Q1: Can you yet stabilize that name?

A1: No, you must have it set aside through the plenary powers of the ICZN (art 75.5)

Q2: Can you still name the unidentifiable specimen?

A2: No, but you can designate a neotype for a specimen from the same locality (a ‘topotype’), whereby the unidentifiable specimen gets the same name (after approval of the ICZN)

Example: Synonyms

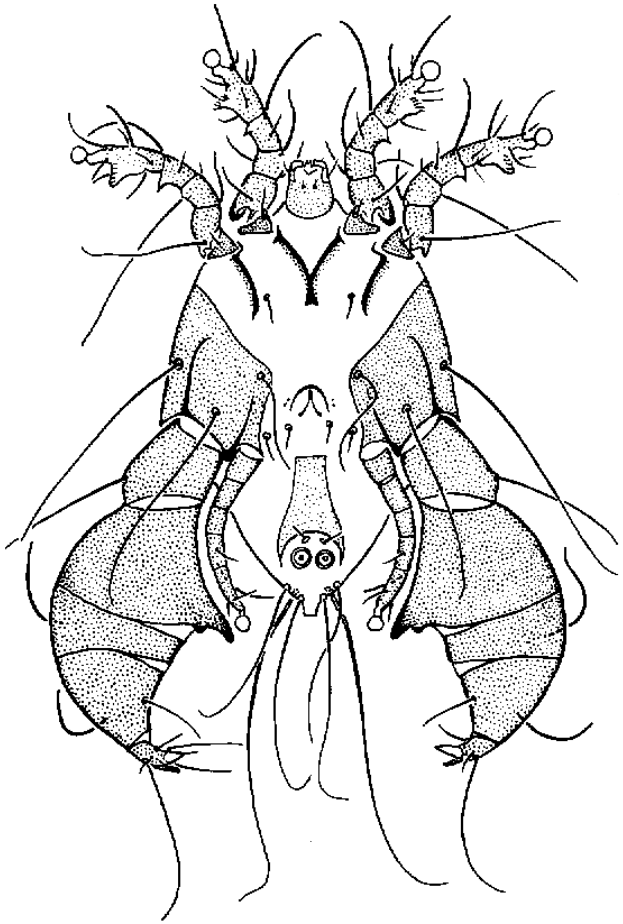
Genus *Sturnophagoides* Fain, 1967

- ***S. bakeri* Fain, 1967**
- ***S. petrochelidonis* Cuervo & Dusbabek, 1987**
- ***S. brasiliensis* Fain, 1967**

  ***Sturnophagoides halterophilus* Fain & Feinberg, 1970, Fain, 1988**

***S . halterophilus* is considered as a synonym of *S. brasiliensis* because the description was based on a strongly heteromorphic male.**

Frecuently the phenomenon of polymorphism is reserved almost exclusively to males with two forms, called homeomorphs and heteromorphs.



Example: About of types

***Dermatophagoides pteronyssinus* (Trouessart, 1897)**

- ***Dermatophagoides scheremetewskyi* Bogdanov, 1864**
- ***Pachylichus crassus* Canestrini, 1894**
- ***Mealia pteronyssina*, Trouessart, in Berlesse 1897**
- ***Dermatophagoides pteronyssinus*, Dubinin, 1953; Fain, 1965**
- ***Mealia toxopei* Oudemans, 1928**
- ***Visceroptes saitoi* Sasa, 1948**
- ***Dermatophagoides saitoi* Sasa, 1950**
- ***Dermatophagoides sp.* Voorhorst et al., 1964**
- ***Dermatophagoides sp.* Voorhorst et al., 1964.**
- ***Dermoglyphus (Paralges) pteronyssoides* Trouerssart, 1886: Gaud, 1968; Fain, Oshima & Bronswijk, 1974 *(nom. oblitum)***

(Fain, 1966) showed the reasons which have led us to choose *Dermatophagoides pteronyssinus* (Trouessart) instead of *D.scheremetewskyi* Bogdanov to represent the species of Pyroglyphidae most commonly found in houses in Europe. Unfortunately the types of this species are lost and original darwings of Bogdanov do not allow recognition of the species with certainty.

Samsinak, Vobrazkova & Dubinina (1982) have proposed to the International Commission of Nomenclature the inclusion of the name *Dermatophagoides pteronyssinus* (Trouessart, 1897) in the list of valid names (nomina conservanda) with as a synonym *D. scheremetewskyi*

Gracias por su atencion