Out of the Net and Into the Museum:

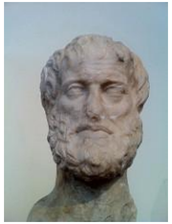
Ethics of Collecting and the Adventure of 60,000 Lifetimes

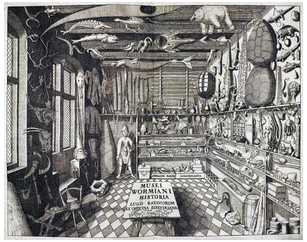
Emily L. Sandall
Ph.D. Candidate in Entomology, Penn State University

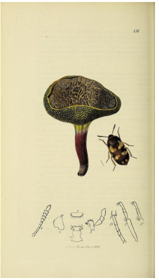
But no pursuit at Cambridge was followed with nearly so much eagerness or gave me so much pleasure as collecting beetles. It was the mere passion for collecting; for I did not dissect them, and rarely compared their external characters with published descriptions, but got them named anyhow.

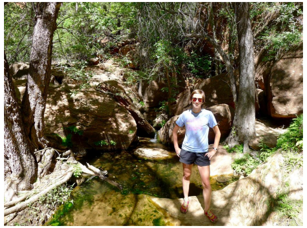
-Charles Darwin, 1887

Timeline









330 BC

Pre-Enlightenment

1600s

1700s

1800s

1900s

2018 AD

VIRTUE ETHICS

EXPLORATION ETHICS

CONSERVATION ETHICS

Pre-Enlightenment: Insect Symbolism

Photo by Horniman Museum (CC BY-NC-ND 2.0)

The British Library Board (In public domain)

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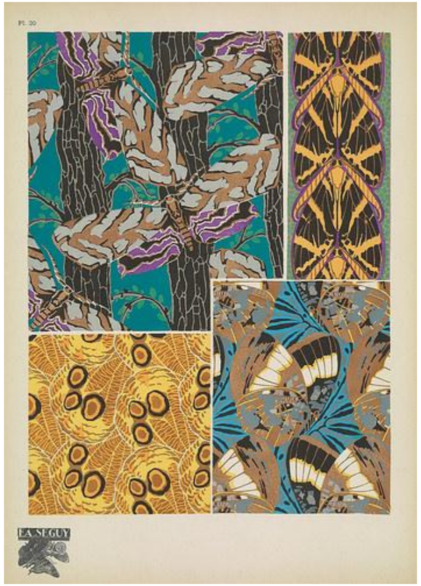
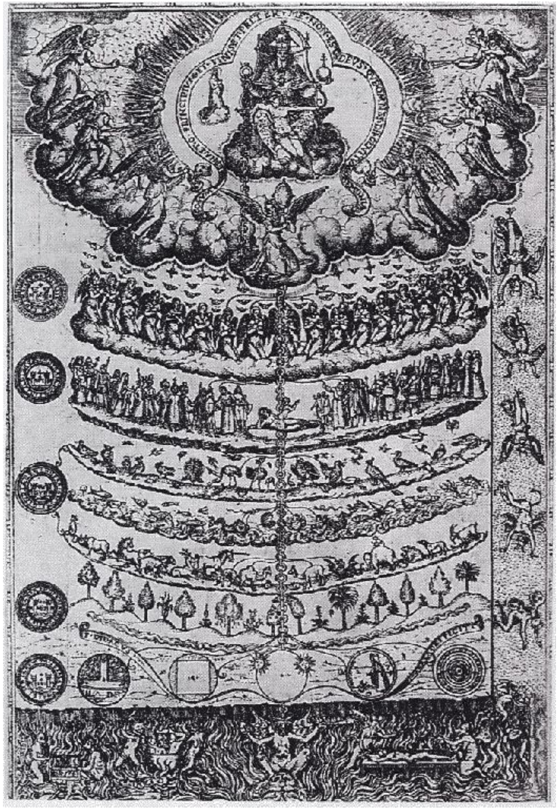


Séguy Print by Biodiversity Heritage Library (CC BY 2.0).

330 BC: Aristotle and Classification Origins

School of Athens image (PD-Art).



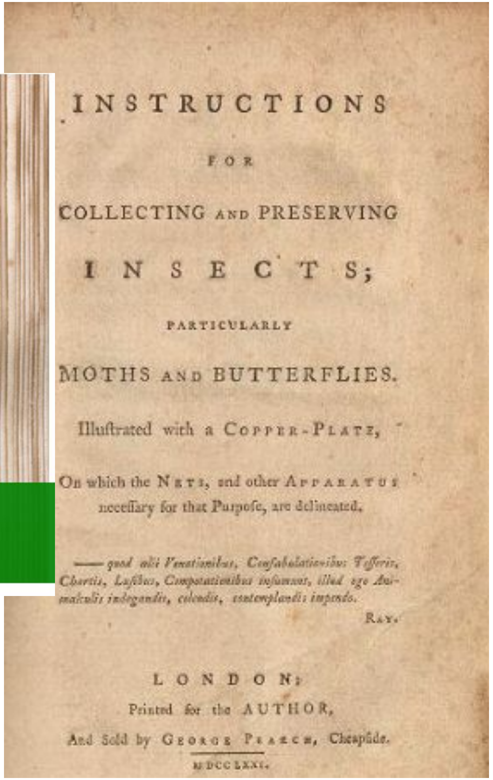
Chain of being image (PD-Art)


RITRATTO DEL MVSEO DI
FERRANTE IMPERATO

1700s: Natural History Collection/Classification Origins

Milkweed or monarch butterflies from the family (Danainae) mounted between sheets of mica, in a volume of Petiver insects.

Historical Collection at British Museum of Natural History



INSTRUCTIONS

FOR

COLLECTING AND PRESERVING

INSECTS;

PARTICULARLY

MOTHS AND BUTTERFLIES.

Illustrated with a COPPER-PLATE,

On which the NETS, and other APPARATUS necessary for that Purpose, are delineated.

—quod alii Venationibus, Confabulationibus: Tesseris, Chartis, Lusibus, Compotationibus insumunt, illud ego Animalculis indagandis, colendis, contemplandis impendo.

RAY.

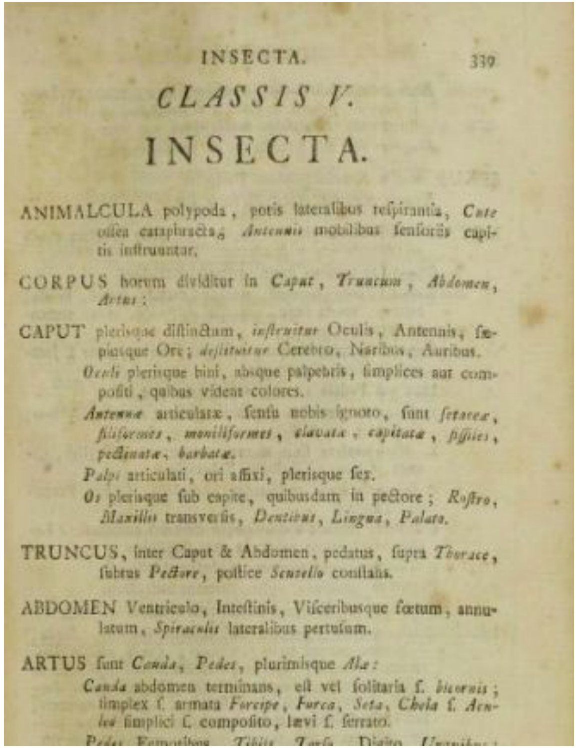
LONDON:

Printed for the AUTHOR,

And Sold by GEORGE PEARCH, Cheapside.

MDCCLXXI.

Curtis 1771



INSECTA. 339

CLASSIS V.

INSECTA.

ANIMALCULA polypoda, poris lateralibus respirantia, Cute ossea cataphracta, Antennis mobilibus sensoriis capitis instruuntur.

CORPUS horum dividitur in Caput, Truncum, Abdomen, Artus:

CAPUT plerisque distinctum, instruitur Oculis, Antennis, plerisque Ore; destituitur Cerebro, Naribus, Auribus.

Oculi plerisque bini, absque palpebris, simplices aut compositi, quibus vident colores.

Antennae articulatae, sensu nobis ignoto, sunt setaceae, filiformes, moniliformes, clavatae, capitatae, fissiles, pectinatae, barbatae.

Palpi articulati, ori affixi, plerisque sex.

Os plerisque sub capite, quibusdam in pectore; Rostro, Maxillis transversis, Dentibus, Lingua, Palato.

TRUNCUS, inter Caput & Abdomen, pedatus, supra Thorace, subtus Pectore, postice Scutello constans.

ABDOMEN Ventriculo, Intestinis, Visceribusque foetum, annulatum, Spiraculis lateralibus pertusum.

ARTUS sunt Cauda, Pedes, plurimisque Alae:

Cauda abdomen terminans, est vel solitaria s. bicornis; simplex s. armata Forcipe, Furca, Seta, Chela s. Aculeo simplici s. composito, laevi s. serrato.

Linnaeus 1758

1800s: Shifting Focus

Image by Biodiversity Heritage Library (CC BY 2.0).

Image by Biodiversity Heritage Library (CC BY 2.0)

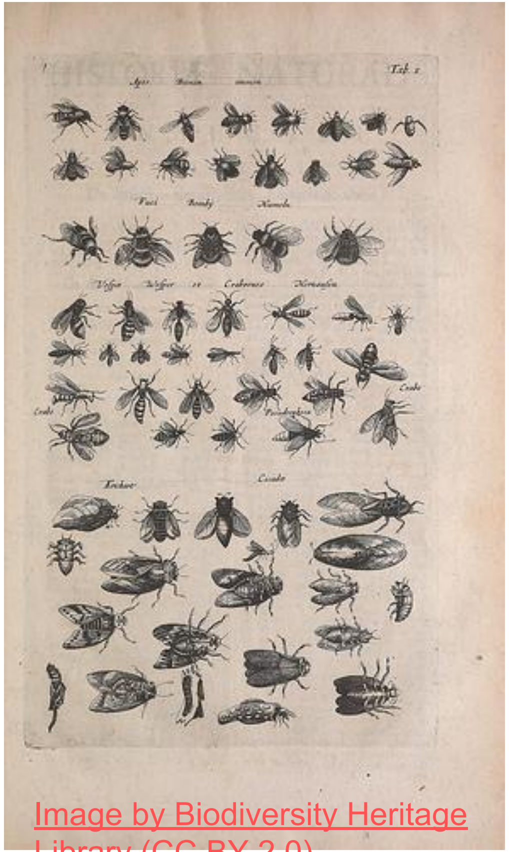
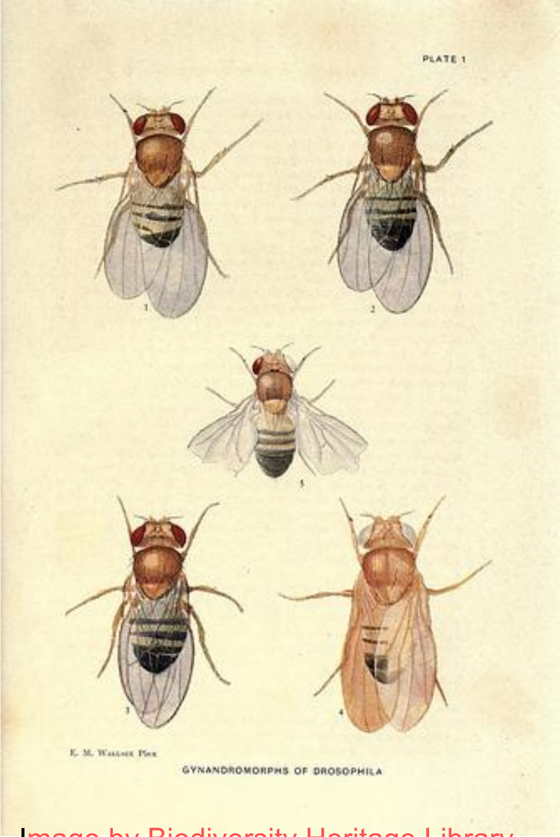


Image by Biodiversity Heritage Library (CC BY 2.0).

1900s: Historical Insect Research



2000s: Conservation & Eradication

Image by Biodiversity Heritage Library (CC BY 2.0).

Photo by Jimmy Smith (CC BY-NC-ND 2.0)

Action-Guiding Policies & Ethics

SHOULD ANIMALS HAVE STANDING? A RE
STANDING UNDER THE ANIMAL WELFA

*Joseph Mendelson, III**

INTRODUCTION

Thirty years ago, Congress passed the Animal Welfare to combat the growing problems of pets stolen for us research and abusive animal research practices.[1] The AV amended several times since its passage in 1966 which in considerable expansion of the statute's original purpos Currently, the AWA governs not only federal animal re ties but also numerous activities involving the treatmen The Act also defines and regulates parties directly in handling animals including pet dealers, animal exhibitors medical research grant recipients.[3]

Despite the expanding reach of the AWA's regulatory r is general consensus that the statute has failed to fulfill in fostering the humane treatment of animals.[4] The AW

* Director of Legal Affairs for the International Center for Technology Ass non-profit organization devoted to exploring the economic, environmental, eth social impacts that can result from the application of technology or technolog received his B.A. from Colgate University in 1988 and is a 1991 graduat Washington University Law School.

Mendelson 1996

Between the

Not to Harm a Fly: Our Ethical Obligations to Insects

Jeffrey A. Lockwo
University of Wyoming

Sentience is the most empirically sound basis for the study of animal rights. Perhaps that is why this attribute most often provides the foundation for philosophical investigations of the ethical treatment of animals. A number of psychological parameters have been used to define sentience, and many philosophers find these attributes intuitively and rationally satisfying criteria with which to define the limits of moral consideration. Mental experiences which provide answerable questions for biological experimentation and theory and a defensible basis for moral consideration include pain and consciousness. Given the early argument of Jeremy Bentham, that upon introspection pain is the one intrinsic evil that we can all agree upon, and the contemporary philosophical arguments regarding the moral relevance of pain in animals (Singer 1975, 1977, Fox 1977, Regan 1983), it would seem that Clark (1977) is on safe ground in arguing that the sparing of unnecessary pain is a minimum principle of ethical behavior. Conscious thought is fundamental to beings who have interests or lives that can be made better or worse, and the inclusion of a being within the scope of moral concern is often predicated on the life of the being mattering to it (Rollin 1981, Rachels 1983). It follows that painless death of an organism without the capacity to think of itself as a distinct entity is at worst a replaceable loss of pleasure (Singer 1975, 1977). Thus extensive and generally convincing arguments ground animal rights and human obligations in sentience.

Although a great deal of biological research relevant to sentience has been incorporated into discussions of the ethical treatment of animals, insects have not been addressed with more than a passing acknowledgment, if that. This exclusion represents a significant oversight, in th by far the most diverse (75% of all anin insects) and abundant (there are abou alive at any moment or 200 million fo being) of any class of animals (Eisne 1977). Insects provide a valuab investigations of sentience, although t been as extensively studied as ver employing the comparative fields morphology, physiology, neurophy behavior as well as considerations of th evolutionary biology, there can b consideration of mental processes in sound basis for their inclusion in our s considerations.

Pain as a Criterion for Senti

Considerable empirical evidence e that a variety of invertebrates exp Alumets et al. (1979) reported tha possess B-endorphins and enkephlins the capacity for pain by functional eminent insect physiologist, V. B.

PHILOSO

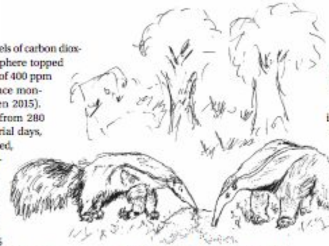
Lockwood 1988

BUZZWORDS

A Consuming Passion for Entomophagy

MAY R. BERENBAUM

In March 2015, levels of carbon dioxide in the atmosphere topped a global average of 400 ppm for the first time since monitoring began (Allen 2015). This increase, up from 280 ppm in pre-industrial days, has been accompanied, not coincidentally, by an increase of 1.6°F in global temperatures (Kahn 2015). On 12 December, representatives from 196 nations signed a historic agreement to get serious about reducing CO_2 inputs (Davenport 2015). It turns out, though, that, even in nations committed to stopping, slowing, or reversing climate change, there are limits on what individual citizens are willing to do. Some individuals, including, e.g., 182 members of the 116th United States Congress (Herzog 2016, Ellingboe and Koronowski 2016), aren't even willing to acknowledge that it's a thing. If, however, you're among those who feel that the evidence indicates that global temperatures are increasing as a



"No thanks—I'm anti-anty-GMO."

convincing them to, say, install a programmable thermostat. The argument for entomophagy, though, is pretty compelling, at least on sustainability grounds (van Huis et al 2013, 2015). For example, CO_2 production per kg of mass gain for insects is only 12% of that for cattle, and in the process of gaining all that mass, insects generate less than 3% of the ammonia and methane that cattle produce (Oonincx et al. 2010). Other environmental benefits include reduced water

(Cather 2015), which is, although environmentally impressive, probably not a slogan they should be putting on product labels anytime soon. Like CO_2 in the atmosphere, interest in entomophagy has been creeping upward of late. International food and restaurant consultants Baum and Whiteman identified "eating bugs" as one of 2015's most important dining-out trends (along with craft gin, vegetable yogurt, and savory waffles) (Johnson 2014, Borel 2015). Blueshift Research, a market research firm that uses data to identify "unique and controversial ideas that could lead to investable action," has added "insect-based foods" to their Trends Tracker, an ongoing survey of a thousand American consumers. Last March, they found that "One-third of respondents are likely to buy an insect-based product, but growth rate is sluggish" (Rudy 2015). As an entomologist, I find their analysis disturbing, not because I've invested heavily in the hope of making a quick profit on edible

Berenbaum 2016

Collections: Uses for Specimens from the Past

Collections-Based Research

Chlorinated Hydrocarbons and Eggshell Changes in Raptorial and Fish-Eating Birds

Abstract. *Catastrophic declines of three raptorial species in the United States have been accompanied by decreases in eggshell thickness that began in 1947, have amounted to 19 percent or more, and were identical to phenomena reported in Britain. In 1967, shell thickness in herring gull eggs from five states decreased with increases in chlorinated hydrocarbon residues.*

New perspectives on the role of chlorinated hydrocarbon insecticides in our environment have come into focus in recent years. Successive discoveries have demonstrated that these compounds are systematically concentrated in the upper trophic layers of animal pyramids (*1*). Raptorial bird populations have simultaneously suffered severe population crashes in the United States and Western Europe (*2, 3, 4*). These involve reproductive failures which, at least in Britain, are characterized by changes in calcium metabolism and by a decrease in eggshell thickness resulting in the parent birds' breaking and eating their own eggs (*4, 5, 6*). Such a derangement of calcium metabolism or mobilization perhaps could result from breakdown of steroids by hepatic microsomal enzymes induced by exposure to low dietary levels of chlorinated hydrocarbons (*7*).

We have examined the possibility that the eggshell changes reported in Britain (*6*) have also occurred in the United States and that the raptor population crashes in Europe and North America may have had a common physiological mechanism. The population changes are without parallel in the recent history of bird populations (*8*). They include the pending extirpation of the peregrine falcon (*Falco peregrinus*) in northwestern Europe, the complete extirpation of the nesting population of this species in the eastern half of the United States, declining populations; golden eagles (*Aquila chrysaetos*), red-tailed hawks (*Buteo jamaicensis*), and great horned owls (*Bubo virginianus*) were selected as representative of reasonably stationary populations that may be slowly declining as their habitats are gradually destroyed by man, but for which widespread reproductive failures are currently unknown. In addition, 57 eggs of the herring gull (*Larus argentatus*) were collected from five colonies in 1967. The shells of these were dried at room temperature for 4 months before being measured, and residues of the entire egg contents were analyzed by the Wisconsin Alumni Research Foundation for chlorinated hydrocarbons but not for polychlorinated biphenyls. Analytical procedure followed that outlined by the U.S. Food and Drug Administration (*9*). Analyses were conducted on a ga chromatograph (Barber Coleman, mod GC 5000, and Jarrell-Ash, model 2 700) with electron-capture detector The glass column (0.6 cm by 1.2 m) wa packed with 5 percent DC 200 (12,50 on Cromport XXX. The column tem perature was 210°C, and the nitroge flow rate was 75 cm^3/min. Each po tion of the ground and dried sampl was extracted for 8 hours or more in Soxhlet apparatus with a mixture o ether and petroleum ether (70:170 Portions of the extracts were furth purified by putting them through Florisil column.

In California, where the peregrin falcon population is in "a serious co dition" (*10*), a change of 18.8 perce in shell weight occurred from 1947 1952. Ratcliffe (*6*) found a correspon ing decrease of 18.9 percent in Britai The change in California involved a d crease in shell thickness and had n precedent in the previous 57-year r corded history of the peregrine in th state (Fig. 1). In the eastern Unite States, where the nesting population o peregrines has now been wiped out (*3* fragmentary data indicate that the sam change took place (Table 1). Broke

Table 1. Weights of raptor eggshells in museum and private collections. Citations (*23–2* refer to the data for the population trend; S.E., standard error of the mean.

Region	Period	No.	Weight (g) Mean ± S.E.	Weight (g) Change (%)	Populati trend (reprodu tion)
		Red-tailed hawk			
Calif. (*23*)	1885–1937	386	6.32 ± 0.032		
	1943–44	6	6.09 ± 0.237	− 3.6	Stationa
	1953–67	8	6.49 ± 0.214	+ 2.7	Stationa
		Golden eagle			
Calif. (*23*)	1889–1939	278	13.03 ± 0.083		
	1940–46	28	12.70 ± 0.161	− 2.5	Stationa
	1947–65	33	13.41 ± 0.232	+ 2.9	Stationa
		Bald eagle (24a)			
Brevard Co., Fla.	1886–1939	56	12.15 ± 0.127		

Hickey & Anderson 1968

Museum specimens reveal loss of pollen host plants as key factor driving wild bee decline in The Netherlands

Jeroen Scheper[a,1], Menno Reemer[b], Ruud van Kats[a], Wim A. Ozinga[c,d], Giel T. J. van der Linden[e], Joop H. J. Schaminée[c,d], Henk Siepel[f,g], and David Kleijn[a,e]

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Edited by May R. Berenbaum, University of Illinois at Urbana-Champaign, Urbana, IL, and approved October 30, 2014 (received for review July 9, 2014)

Evidence for declining populations of both wild and managed bees has raised concern about a potential global pollination crisis. Strategies to mitigate bee loss generally aim to enhance floral resources. However, we do not really know whether loss of preferred floral resources is the key driver of bee decline because accurate assessment of host plant preferences is difficult, particularly for species that have become rare. Here we examine whether population trends of wild bees in The Netherlands can be explained by trends in host plants, and how this relates to other factors such as climate change. We determined host plant preference of bee species using pollen loads on specimens in entomological collections that were collected before the onset of their decline, and used atlas data to quantify population trends of bee species and their host plants. We show that decline of preferred host plant species was one of two main factors associated with bee decline. Bee body size, the other main factor, was negatively related to population trend, which, because larger bee species have larger pollen requirements than smaller species, may also point toward food limitation as a key factor driving wild bee loss. Diet breadth and other potential factors such as length of flight period or climate change sensitivity were not important in explaining twentieth century bee population trends. These results highlight the species-specific nature of wild bee decline and indicate that mitigation strategies will only be effective if they target the specific host plants of declining species.

bee decline | land use change | floral resources | pollen preference | crop pollination

These differential responses can be used to disentangle the effects of floral resource availability from those of other potential factors affecting bee population trends. The proportion of the floral resources in contemporary anthropogenic landscapes that can be used for forage by a bee species depends on its diet breadth and host plant preference, and it may be expected that species that have declined have a narrower diet breadth and prefer host plants that have declined (14, 15). However, diet breadth and host plant preference of bee species is difficult to assess. Presently observed host plant use does not necessarily reflect actual preference, as preferred host plants may have gone locally extinct and bees that have declined may have become restricted in their food choice in their remaining habitats (15). In addition, if host plant use is measured for more individuals of abundant, widespread species than for rare ones, an apparent link between diet breadth and population trend may simply arise as a sampling artifact (16). Furthermore, the relationship between host plant use and population trend may be confounded by species' rarity prior to the onset of major environmental changes (17), as rarity in itself increases susceptibility to stochastic events (18) and has been shown to be one of the most important factors predicting population decline in various taxa (19–21). Surprisingly, to our knowledge, none of the studies that have so far examined the relationship between diet breadth and/or host plant preference and bee population trends have taken species' initial rarity into account (e.g., refs. 3, 4, 15, and 22). Other factors, such as body size (4, 23), phenology (4, 22), and

Significance

Scheper et al. 2018

A Code of Ethics?

The Insect Collectors' Code*

Carolyn Trietsch & Andrew R. Deans†
Frost Entomological Museum, Pennsylvania State University, University Park, PA USA

3 May 2017

I strive to fulfill, to the best of my ability, the following ideals:

1. I will respect the hard-won scientific gains of those entomologists in whose steps I walk and gladly share my scientific gains and knowledge with those who are to follow.

2. I will aid in the dissemination of scientific knowledge, both to those who study insects and those who do not.

3. I will not discriminate against others, and I will strive to create a safe working environment, whether in the field, the classroom, or the lab.

4. I will treat insects humanely. As a collector, it is within my power to take insect life; I will not take insects that will not be deposited in a natural history collection or otherwise made available for research and education. While bycatch is often unavoidable, I will, to the best of my ability, attempt to reduce the unnecessary loss of insect life and find use for these specimens.

5. I will consider the ecological impact of removing insects and their products (galls, nests, *etc.*) from the environment when collecting, whether the species are protected by law, known to be declining, or are considered to be of least concern. I will strive to avoid or minimize disturbance to the environment while collecting.

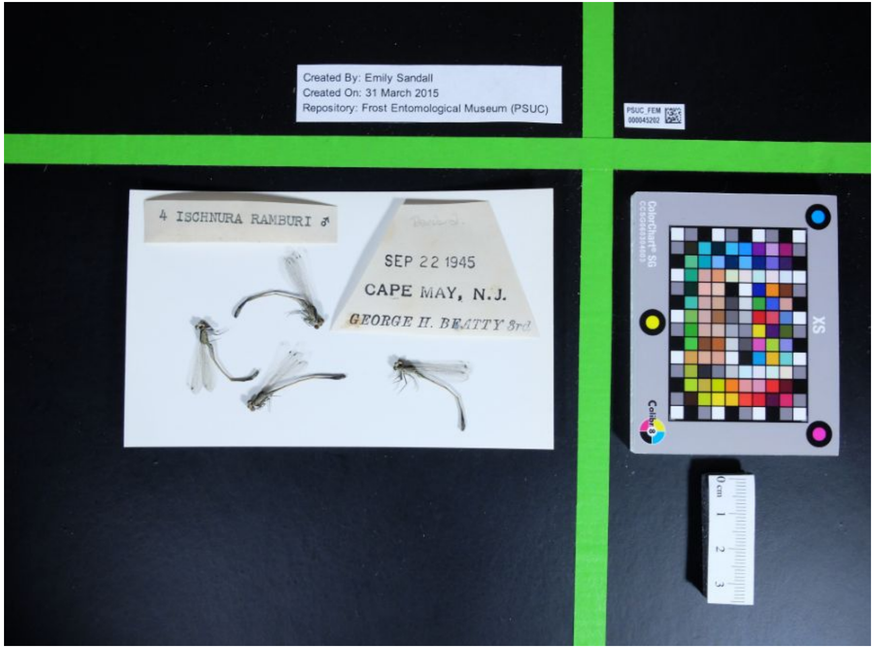
6. I will secure appropriate permits prior to collecting insects, and I will honor and uphold the provisions stated by each permit. I will keep copies of all permits on my person while collecting and furnish them to authorized agents upon request. I will save all permits associated with specimens as proof that they were


LEUCORRHINIA GLACIALIS Hagen
Westwood; [Lassen Co.,Calif.]
4.VI.'46. (collector?)
LEUCORRHINIA GLACIALIS Hagen
Parc Mt.Tremblant,Quebec,Canada
27.VII.52. (A.Robert)
LEUCORRHINIA GLACIALIS Hagen
Webber Bog (#56)
Lincoln Co.,Maine
1.VII.46. (D.J.Borror)
IN COP.

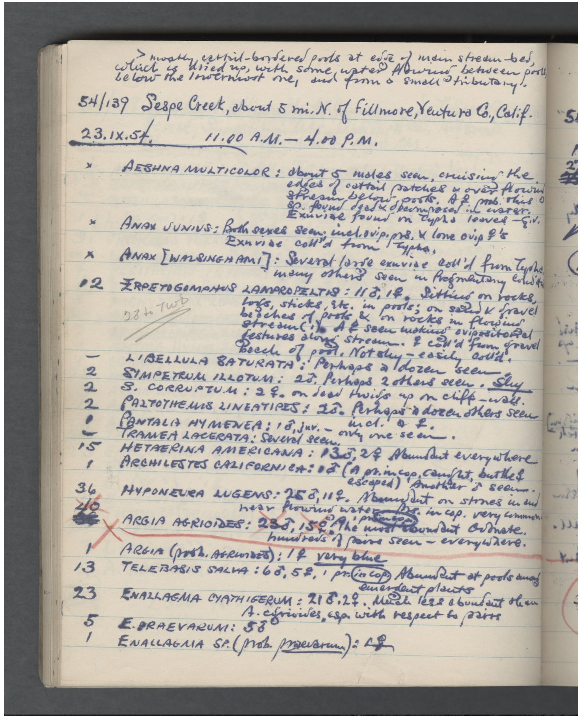
The Beattys: Building a Collection

The Journey


SEP • 59 •
AGUA


Created By: Emily Sandall
Created On: 31 March 2015
Repository: Frost Entomological Museum (PSUC)
PSUC_FEM 000045202
4 ISCHNURA RAMBURI ♂
SEP 22 1945
CAPE MAY, N.J.
GEORGE H. BEATTY 3rd

Field Notes & Associated Papers



> mostly cattail-bordered pools at edge of main stream-bed, which is dried up, with some water flowing between pools below the lowermost one, and from a small tributary.

54/139 Sespe Creek, about 5 mi. N. of Fillmore, Ventura Co., Calif.

23.IX.54. 11.00 A.M. – 4.00 P.M.

× AESHNA MULTICOLOR: about 5 males seen, cruising the edges of cattail patches & over flowing stream below pools. A ♀ prob. this sp. found dead & decomposed in water. Exuviae found on Typha leaves – q.v.

× ANAX JUNIUS: Both sexes seen, incl. ovip. prs. & lone ovip ♀'s. Exuviae coll'd from Typha.

× ANAX [WALSINGHAMI]: Several large exuviae coll'd from Typha, many others seen in fragmentary condition.

2 ERPETOGOMPHUS LAMPROPELTIS: 1♂, 1♀. Sitting on rocks, logs, sticks, etc. in pools; on sand & gravel beaches of pools & on rocks in flowing stream(?). A ♀ seen making ovipositional gestures along stream. ♀ coll'd from gravel beach of pool. Not shy – easily coll'd.

— LIBELLULA SATURATA: Perhaps a dozen seen.

2 SYMPETRUM ILLOTUM: 2♂. Perhaps 2 others seen. Shy.

2 S. CORRUPTUM: 2♀. on dead twigs up on cliff-wall.

2 PALTOTHEMIS LINEATIPES: 2♂. Perhaps a dozen others seen incl. a ♀.

1 PANTALA HYMENEA: 1♂, juv. – only one seen.

— TRAMEA LACERATA: Several seen.

15 HETAERINA AMERICANA: 13♂, 2♀. Abundant everywhere.

1 ARCHILESTES CALIFORNICA: 1♂ (A pr. in cop. caught, but the ♀ escaped). Another ♂ seen.

36 HYPONEURA LUGENS: 25♂, 11♀. Abundant on stones in and near flowing water. Prs. in cop. very common.

40 ARGIA AGRIOIDES: 23♂, 15♀. The most abundant Odonate. hundreds of pairs seen – everywhere.

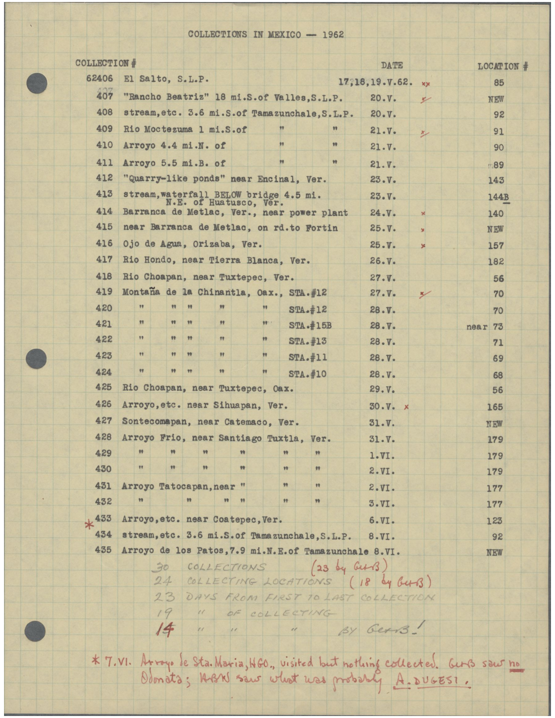
1 ARGIA (prob. AGRIOIDES): 1♀ very blue

13 TELEBASIS SALVA: 6♂, 5♀, 1 pr. in cop. Abundant at pools among emergent plants

23 ENALLAGMA CYATHIGERUM: 21♂, 2♀. Much less abundant than A. agrioides, esp. with respect to pairs

5 E. PRAEVARUM: 5♂

1 ENALLAGMA SP. (prob. praevarum): 1♀

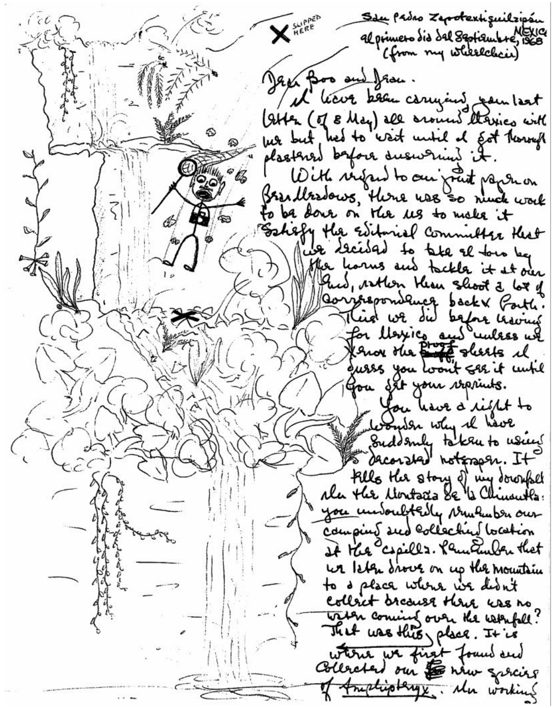


COLLECTIONS IN MEXICO — 1962

COLLECTION #		DATE		LOCATION #
62406	El Salto, S.L.P.	17,18,19.V.62.	××	85
407	"Rancho Beatriz" 18 mi.S.of Valles,S.L.P.	20.V.	×	NEW
408	stream,etc. 3.6 mi.S.of Tamazunchale,S.L.P.	20.V.		92
409	Rio Moctezuma 1 mi.S.of " "	21.V.	×	91
410	Arroyo 4.4 mi.N. of " "	21.V.		90
411	Arroyo 5.5 mi.B. of " "	21.V.		89
412	"Quarry-like ponds" near Encinal, Ver.	23.V.		143
413	stream,waterfall BELOW bridge 4.5 mi. N.E. of Huatusco, Ver.	23.V.		144B
414	Barranca de Metlac, Ver., near power plant	24.V.	×	140
415	near Barranca de Metlac, on rd.to Fortin	25.V.	×	NEW
416	Ojo de Agua, Orizaba, Ver.	25.V.	×	157
417	Rio Hondo, near Tierra Blanca, Ver.	26.V.		182
418	Rio Choapan, near Tuxtepec, Ver.	27.V.		56
419	Montaña de la Chinantla, Oax., STA.#12	27.V.	×	70
420	" " " " " STA.#12	28.V.		70
421	" " " " " STA.#15B	28.V.		near 73
422	" " " " " STA.#13	28.V.		71
423	" " " " " STA.#11	28.V.		69
424	" " " " " STA.#10	28.V.		68
425	Rio Choapan, near Tuxtepec, Oax.	29.V.		56
426	Arroyo,etc. near Sihuapan, Ver.	30.V.	×	165
427	Sontecomapan, near Catemaco, Ver.	31.V.		NEW
428	Arroyo Frio, near Santiago Tuxtla, Ver.	31.V.		179
429	" " " " " "	1.VI.		179
430	" " " " " "	2.VI.		179
431	Arroyo Tatocapan,near " " "	2.VI.		177
432	" " " " " "	3.VI.		177
*433	Arroyo,etc. near Coatepec,Ver.	6.VI.		123
434	stream,etc. 3.6 mi.S.of Tamazunchale,S.L.P.	8.VI.		92
435	Arroyo de los Patos,7.9 mi.N.E.of Tamazunchale	8.VI.		NEW

30 COLLECTIONS (23 by G+B)
24 COLLECTING LOCATIONS (18 by G+B)
23 DAYS FROM FIRST TO LAST COLLECTION
19 " OF COLLECTING
14 " " " BY G+B!

* 7.VI. Arroyo de Sta. Maria, HGO., visited but nothing collected. G+B saw no Odonata; HBW saw what was probably A. DUGESI.



San Pedro Zapotextiquilzipán MEXICO
el primero dia del Septiembre, 1968
(from my wheelchair)

Dear Boo and Jean.

I have been carrying your last letter (of 8 May) all around Mexico with me but had to wait until I got thoroughly plastered before answering it.

With regard to our joint paper on Bear Meadows, there was so much work to be done on the ms to make it satisfy the editorial committee that we decided to take el toro by the horns and tackle it at our end, rather than shoot a lot of correspondence back & forth. This we did before leaving for Mexico and unless we Xerox the proof sheets I guess you won't see it until you get your reprints.

You have a right to wonder why I have suddenly taken to using decorated notepaper. It tells the story of my downfall in the Montaña de la Chinantla: you undoubtedly remember our camping and collecting location at the capilla. Remember that we later drove on up the mountain to a place where we didn't collect because there was no water coming over the waterfall? That was this place. It is where we first found and collected our new species of Amphipteryx. I'm working

[Penn State Special Collections Library](#)

Contributions

New storage standard

New regions sampled

Arigomphus maxwelli (Ferguson 1950) (Gomphidae)

New species described


Frost
Entomological
Museum

Specimen Utility & Future

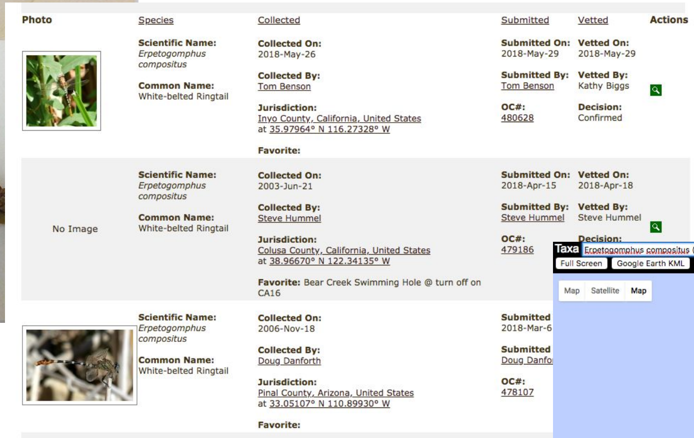
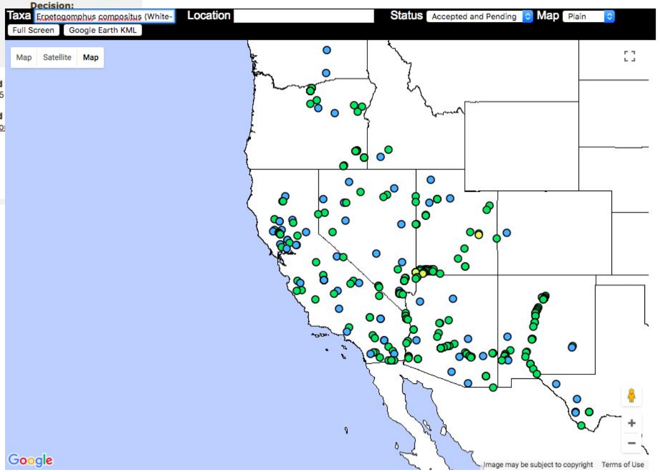
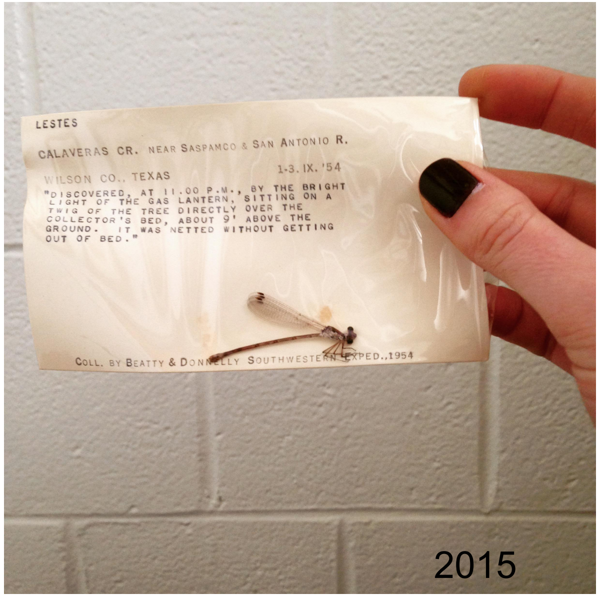


Photo	Species	Collected	Submitted	Vetted	Actions
	Scientific Name: *Erpetogomphus compositus* **Common Name:** White-belted Ringtail	**Collected On:** 2018-May-26 **Collected By:** Tom Benson **Jurisdiction:** Inyo County, California, United States at 35.97964° N 116.27328° W **Favorite:**	**Submitted On:** 2018-May-29 **Submitted By:** Tom Benson **OC#:** 480628	**Vetted On:** 2018-May-29 **Vetted By:** Kathy Biggs **Decision:** Confirmed	
No Image	**Scientific Name:** *Erpetogomphus compositus* **Common Name:** White-belted Ringtail	**Collected On:** 2003-Jun-21 **Collected By:** Steve Hummel **Jurisdiction:** Colusa County, California, United States at 38.96670° N 122.34135° W **Favorite:** Bear Creek Swimming Hole @ turn off on CA16	**Submitted On:** 2018-Apr-15 **Submitted By:** Steve Hummel **OC#:** 479186	**Vetted On:** 2018-Apr-18 **Vetted By:** Steve Hummel **Decision:**	
	Scientific Name: *Erpetogomphus compositus* **Common Name:** White-belted Ringtail	**Collected On:** 2006-Nov-18 **Collected By:** Doug Danforth **Jurisdiction:** Pinal County, Arizona, United States at 33.05107° N 110.89930° W **Favorite:**	**Submitted** 2018-Mar-6 **Submitted** Doug Danfo **OC#:** 478107		



How Did I Get Here?



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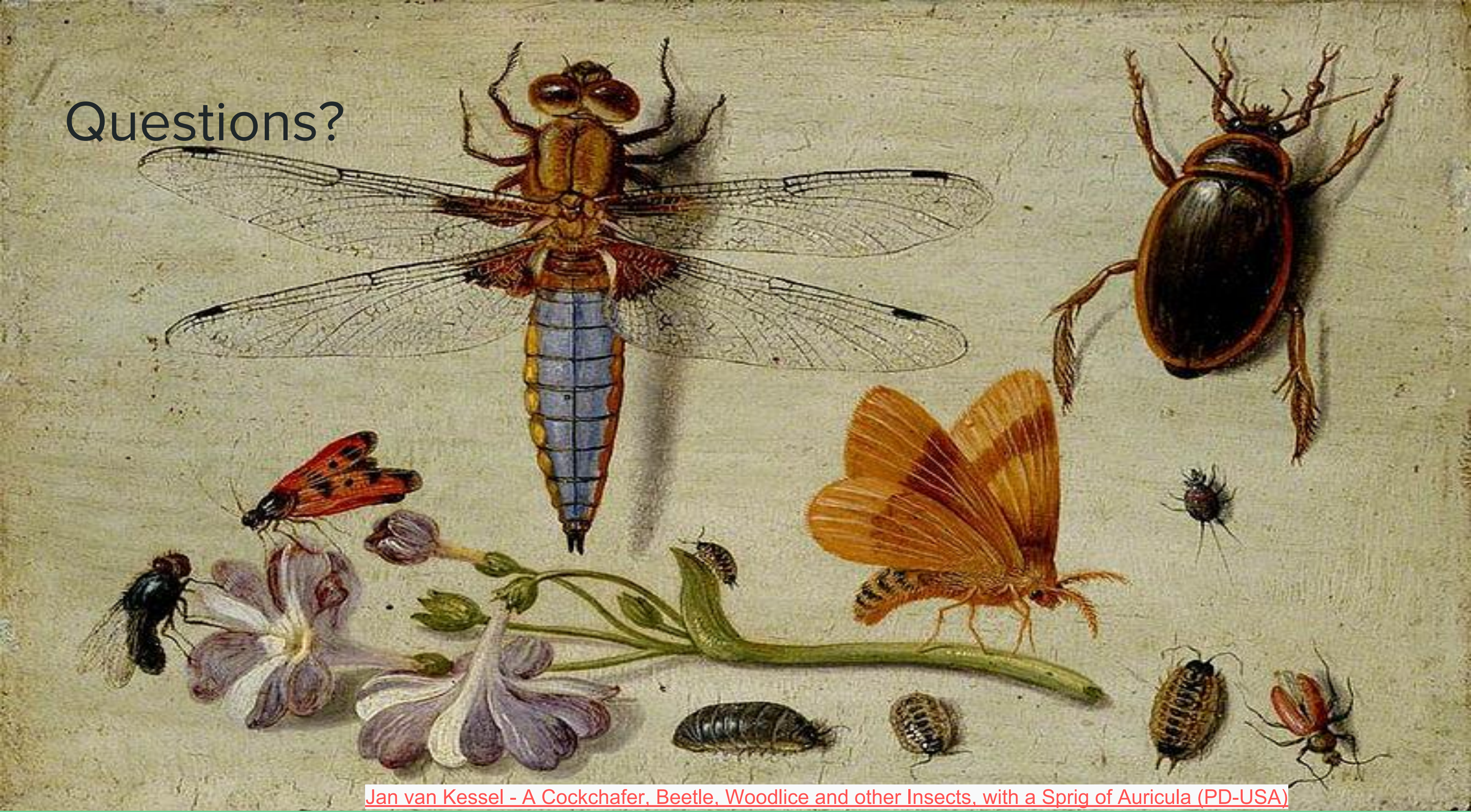
Chasing Butterflies in Medieval Europe Article in Journal of the Lepidopterists' Society · November 2014 DOI: 10.18473/lepi.v68i4.a1 Vazrick Nazari

Georg Toepfer (Zentrum für Literatur- und Kulturforschung, Berlin) Unequivocal ethical concern in pluralistic guise

Darwin Correspondence Project

Trietsch, C & Deans, A. (2017) The Insect Collectors’ Code. Figshare.

Questions?



Jan van Kessel - A Cockchafer, Beetle, Woodlice and other Insects, with a Sprig of Auricula (PD-USA)

Acknowledgements

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