Women as Bellwethers of Diversity in Entomology

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There is no "typical" female entomologist (there never has been!)

**Serendipity**

- B.A. in French (1973)
- Discovered you could combine study of insects & plant diseases in 1977
- Began a 30+ year career in entomology in 1979
  - Part-time student
  - Full-time research associate
  - ESA member & first meeting
- Discovered team research was for me
  - Aphids as vectors of plant viruses
  - Scales of movement of aphids
  - Design & development of database to track specimens, taxonomic names & their history
  - Biodiversity information standards
- Took on many challenges in ESA, learning valuable lessons & skills, meeting new people
- Was one of the original zoologists to become involved with Biodiversity Information Standards (TDWG)
Major Inspirations in my Career

Mike & Bonnie Irwin

Gwen Pearson

Jay McPherson

Scott Hutchins

Dan, my husband

Elizabeth Beckemeyer

Deb Paul

Susan Halbert

Paula Mitchell

Scott Isard

Lee Belbin

Susan Halbert
Bellwether:

harbinger, herald, indicator, predictor

At ~50% of the population, women have never been represented proportionally as entomologists, except perhaps in today's student population.

Photos from 2008 Student Competition Winners
http://www.entsoc.org/am/2008/wrapup/photos_students
Women in Entomology

• Historically, the acceptance of women in entomology has been seen through the lens of:
  • Traditional roles of helpmates to husbands
  • Teachers of children
  • Observers & illustrators of nature
  • Workers in agricultural/farming/gardening settings

• Their families valued & supported education of girls beyond learning required for traditional homemaking

• However, until ~50 years ago, women's roles were often governed by what their parents and spouses encouraged or allowed...and what employers or professional societies would consider as suitable.
Anna Botsford Comstock 1854-1930

- Embodies all of these qualities
  - Grew up on a farm with early "sense of wonder" toward nature
  - Worked with husband, then independently, illustrating, writing, lecturing; surrogate parents to Cornell University students

Maria Sibylla Merian (1647-1717)

- One of the earliest documented great female naturalists
  - German scientific illustrator, engraver, writer
  - Earned notoriety & funds to travel in 1699 (age 52!) from Amsterdam to Surinam with her daughter; published "Metamorphosis of the Insects of Surinam" on her return

Eleanor A. Ormerod (1828-1901)

- British economic entomologist
  - After the death of her father, who viewed her vocation as a "hobby," at age 45, she started self-publishing 22 annual Reports of Observations of Injurious Insects
  - Did not act as sole authority, but combined her personal observations with those of others of various social classes
But today, women grapple with a new set of challenges. These are often not unique to women, but affect the gamut of diversity outside of the power holders.
But What Issues do Women Face Today in the Workplace?*

- **Work/Family choices**
  - Care of children, aging parents, other family members
  - Tenure clock/establishment in a career conflicting with starting a family
  - Dual career partners
  - Endless postdocs

- **Addressing these issues for women in science & elsewhere, is the subject of many books, articles, podcasts, & presentations**

  *e.g., school, field sites, laboratory, conferences*
ESA: Raising Awareness through

• Workshop
  • 1981 – Women in Entomology: Our Opportunities

• Symposia
  • 1985 – Increasing the Participation of Women in Entomology: Resources and Experiences *
  • 1987 – Women in ESA: A Strong Legacy **
  • 2006 – Women Shaping History in Entomology: Roles & Challenges they Face
  • 2009 – Serendipity: Celebrating the Synchrony of Ideas, Colleagues & Science in Unexpected Ways
  • 2011 – Identifying the Current Status of Women in Entomology, Clarifying Initiatives for Retention, and Speaking Out to Share Experiences **
  • 2014 – Grand Challenges in Keeping & Fostering Women in Entomology: Working Toward a Bright Future on Our Horizon

• Networking
  • 1983-85?; 1988- Annual Women in Entomology Breakfast
  • 2007- Women in Entomology Network

* Published in Bulletin of the Entomological Society of America in 1987
** Published in American Entomologist in 1990; 2011
Women in Entomology Breakfast

• Progenitor to today's breakfast was started in the early 1980s by Don McLean, who was the first ESA President (1984) to put increasing participation of women in entomology as one of his top priorities

• In 1989, Elizabeth Beckemeyer began putting pink post-it notes in the women's restrooms, announcing where and when this secret breakfast would take place!

• Today, ESA provides logistical support for the event that now draws ~200 attendees

• Dow AgroSciences has provided vouchers for student & post-doc breakfasts since 2013
Issues Faced by Females Today in the Workplace?*

- Hostile Environments
  - Microaggressions
  - Social exclusion
  - Harassment
  - Bullying/intimidation
  - Sexual assault

*e.g., school, field sites, laboratory, conferences
What are We Doing about Changing Hostile Environments?

Entomological Society of America is a leader among scientific societies in developing a Code of Conduct applying to Authorship and Harassment & Safety.

No Means No

https://entoallies.wordpress.com/
Twitter: @Ento_Allies

Mentoring
Issues Facing Women in Today's Workplace?

• **Biases**
  
  • Stereotyping of "proper roles & abilities"
  
  • Explicit/overt = prejudice
    
    • Generally illegal, e.g.
      
      • "Are you married?"
      
      • "Do you have children?"
      
      • "When were you born?"
  
  • Implicit/unintended/hidden/blindspots
    
    • We ALL have them, even if we deny or fight them, e.g.
      
      • Associating man = entomologist before woman = entomologist
      
      • Assuming woman taking notes is the secretary
      
      • Rating male candidates as more qualified than female candidates based simply on name

* e.g., school, field sites, laboratory, conferences
It is easier to change the system to overcome biases than to change individual behaviors.

Delacorte Press 2013

Data Experiment SIGN posts = DESIGN

Harvard University Press, 2016
Awards as a Symptom & Bellwether

Recognition of accomplishments can help lend confidence, encourage, & retain more women in the field: lessons for all demographics
Winning Awards & Election to Leadership positions are designed to seek & recognize Greatness

eminence, distinction, illustriousness, repute, high standing; importance, significance; celebrity, fame, prominence, renown

genius, prowess, talent, expertise, mastery, artistry, virtuosity, skill, proficiency; flair, finesse; caliber, distinction

But what if we don't readily associate these terms or "Greatness" with women?
American Entomology's Highest Office

• American Association of Economic Entomologists, parent of modern ESA in 1953
  • In 1930, Edith Patch was elected the first woman President of the AAEE

• ESA Presidents – 64 since 1953
  • Dorothy Feir was elected the first woman President of the Entomological Society of America in 1989
  • Manya Stoetzel – 1996
  • Sharron Quisenberry – 2000
  • May Berenbaum – 2016
  • Susan Weller – 2017
  • Only 6% of elected ESA presidents have been women

• Feir, Stoetzel & Quisenberry were elected as Fellows subsequent to serving as President
Photos missing:
Nellie Payne, 1940
Sylvia Richardson, 1941
Katherine Sommerman, 1952
Rachel Galun, 1996
Why Nominations are Important

• ESA honors greatness in the Founder's Memorial Award & Lecture
  • Out of 59 honorees only two (3%) have been women,
    • Edith Marion Patch - 1996 by James Slater
    • Dame Miriam Rothschild - 2013 by Anurag Agrawal
  • Three women (5%) have been award winners/lecturers, all honoring men
    • Robert Vanden Bosch – 1992 by Marjorie Hoy
    • Charles Brues – 1994 by May Berenbaum
    • Reginald Frederick Chapman – 2011 Angela Douglas
  • This award includes a plaque, $1,000 and free meeting registration, yet nominations are generally low (av. 1.3 from 2010-2012)
What Can We Do?

• Past President Scott Hutchins initiated a project to provide biographies for each of the Fellows since 1984
  - Enhance the discoverability and remembrance of the contributions of both men and women into the future
  - Recognize in one's self and others the potential to be nominated as Fellow (or for another award)

• High profile awards can generate recognition & funds that substantially boost the careers of awardees, attracting students, additional funding, & increasing credibility

http://entsoc.org/awards/honors/fellows_list
What Can We Do?

Nominate, offer to help nominate, or encourage others to nominate deserving candidates for awards & offices.
In the Awards Nomination Process, What Can We Do?

**AVOID GENDERED WORDING**

Women are often described differently from men by well-meaning but gender-biased descriptions in letters of recommendation, nomination, or even in advertisements for jobs or awards...
Male-Associated Adjectives: Standout, Ability, Research

https://awis.site-ym.com/general/custom.asp?page=Awards_Recs
Female-Associated Adjectives: Grindstone, Teaching

conscientious
meticulous
dependable
communicate
assiduous
sylabus
citizen
effort
supervise
methodical
mentee
thorough
persistent
working
dedicated
diligent
instruct
teaching
course
lecture
educate
counselor
disciplined
organized
careful
industrious
adviser
present

https://awis.site-ym.com/general/custom.asp?page=Awards_Recs
Be Conscious of Gendered Wording

• Letter writers: be aware of the effects that words may have on the success of their candidates in competition for awards.
  • Should letters of recommendation be abolished?

• Judging panels: train to recognize the potential for unintended bias from letters, photos, even knowing the gender of the person being judged
  • Structure judging criteria based on objective rather than subjective qualities or interpretations of their import based on quantitative rather than qualitative knowledge

• Review awards solicitations for biases that might tend to discourage nominations by qualified candidates.
We are Entomologists & Scientists

• Data:
  • Too few women are being nominated or winning professional awards in entomology
  • Elected officers in our society do not reflect the demographics of our membership
  • Hostile environments exist in the workplace, at conferences, & in the field

• Experiment:
  • Find testable ways of changing the system to increase participation, retention, & recognition of women in entomology

• Signposts:
  • Increased number of women
    • On the Governing Board and Section & Branch Governing Councils
    • In the Presidential line
  • Greater proportion of women
    • elected as Fellows,
    • chosen as keynote speakers
    • Honored for their accomplishments
  • We can concentrate on being entomologists
    • Ento-Allies are obsolete
    • Retain appreciation for our history, but no longer have any need to keep revisiting issues of women in entomology
Additional Information

Readings
More about three great women in entomology
Implicit bias test: are you really an entomologist? ;)}
Resources for Historical Women in Entomology

• Anna Botsford Comstock
  • Her books at BHL [http://www.biodiversitylibrary.org/creator/1698](http://www.biodiversitylibrary.org/creator/1698)

• Maria Sibylla Merian
  • Todd, K. 2007. *Chrysalis: Maria Sibylla Merian and the secrets of metamorphosis.*

• Eleanor A. Ormerod
  • By & about Ormerod in the Biodiversity Heritage Library [http://www.biodiversitylibrary.org/creator/7598](http://www.biodiversitylibrary.org/creator/7598)

• Edith M. Patch
  • [http://www.edithpatch.org/](http://www.edithpatch.org/) - photo credit
  • Mallis, A. 1971. *American Entomologists*
Resources from the Entomological Society of America

• **Women in Entomology Network**
  - [http://esanetworks.org/group/womeninentalomologynetwork](http://esanetworks.org/group/womeninentalomologynetwork) (requires free ESA Network login)
  - Pearson, G. Breakfast, Women in Entomology, and a Revolution. *Entomology Today* [https://goo.gl/DtDy0o](https://goo.gl/DtDy0o)

• **ESA Fellows**
  - [http://www.entsoc.org/awards/honors/fellows_list](http://www.entsoc.org/awards/honors/fellows_list)

• **Published Symposia**
  - 1985 – Increasing the Participation of Women in Entomology: Resources and Experiences
  - 1987 – Women in ESA: A Strong Legacy
  - 2011 – Identifying the Current Status of Women in Entomology, Clarifying Initiatives for Retention, and Speaking out to Share Experience
    - [https://ae.oxfordjournals.org/content/57/4](https://ae.oxfordjournals.org/content/57/4) (Instant Symposium)
    - *American Entomologist, Winter 2011*
Additional Sources

• **Issues & Solutions**
  
  - Zomorodi, Manoush. 2016. Taking the Lead. Four podcast episodes plus a bonus episode from WNYC’s *Note to Self* [http://www.wnyc.org/shows/notetoself/taking-the-lead](http://www.wnyc.org/shows/notetoself/taking-the-lead)
Anna Botsford Comstock 1854-1930

- Anna Comstock embodies all of these qualities. She
  - Grew up in a farm family with a mother who instilled a "sense of wonder" toward nature
  - Worked with her entomologist husband, John Henry Comstock ("Harry")
    - Learned to illustrate insects
    - Initially his unpaid assistant, overseeing lab, writing entomological notes & answering letters that he would approve & sign
  - They planned together, Harry urging her to acquire more formal education, increase her skills
  - Subsequently known for her own books and lectures
  - Both are fondly remembered as surrogate parents to many Cornell University students.
Maria Sibylla Merian (1647-1717)

- One of the earliest documented great female naturalists
  - German scientific illustrator, engraver, writer
  - Documented the complete life cycle of many European Lepidoptera through careful & patient observations & associations of all stages with their host plants, including the surprising emergence & association with parasitoids
  - Earned notoriety & funds to travel in 1699 (age 52!) from Amsterdam to Surinam with her daughter
  - Returned to Amsterdam in 1701 to write & illustrate *Metamorphosis of the Insects of Surinam*
  - Correspondence & copies of her artwork have persisted through the centuries – testament to her impact
Eleanor A. Ormerod (1828-1901)

- **British economic entomologist**
  - "A Lady Entomologist" *Nature* after her death
    - Took extreme care to justify her work in terms of "genteel philanthropy and domestic helpmeet" (Sheffield, 2001)
  - Her family tolerated her interest in entomology but regarded it as a hobby

- **At 45, with the death of her father, she was free to devote her time to entomology, working from home**
  - From 1877-1901, self-published 22 annual *Reports of Observations of Injurious Insects*
    - Combined her personal observations with those of others of various social classes
    - Not sole scientific authority but mix of teacher/learner/facilitator
    - Tone of her work allowed for multiple solutions to problems with different variables interacting (weather, geography, time of year, availability of workers, etc.)
    - Reports were approachable & affordable by her target audience
Blindspot displayed its own implicit biases

They expect people to show a preference for flower and pleasant words over insects and unpleasant words.

Find out if insects are truly your passion or if you harbor an implicit bias for the more popular flowers!

bit.ly/T8h6uD