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"LET NATURE BE YOUR TEACHER": TEGETMEIER'S DISTINCTIVE ORNITHOLOGICAL STUDIES

By Karen Sayer

ONE OF THE GIVENS OF NATURAL history is that it is the observation of wild nature. However, that way of stating the case establishes a boundary between nature and culture, wild and domestic, whereas humans, as Douglas Sackman observes, have shaped what they call nature "into forms that [are] valuable to themselves or others" (171). This shaping of nature is particularly true of William Bernard Tegetmeier's (1816–1912) lavishly illustrated *The Poultry Book* (1873). A new edition of a work that had sold for one shilling per part in fifteen monthly parts through 1866 to 1867, it carried thirty chromolithograph color plates and ran to three hundred and ninety-two pages. Texts like *The Poultry Book* belonged to the wider circulation of ideas between the discourses of art, literature, and science that led eventually both to the protection of birds in the wild (Kean 113–15) and to their increasingly scientific management in agriculture.

Tegetmeier belonged to that culture which questioned the boundaries between scientific and material/economic knowledge in order to make (animal) nature useful to (human) culture. This brief for the manipulation of nature coincided with an imperialist ideology. Thus, the history of agricultural science, the scientific "development of natural resources, became an explicit mandate of British imperial policy" (Clark, "Bugs" 98), a development relying on the centrality of human needs and desires (Beer 54). Yet, this way of thinking was premised on the assumption that nature is entirely malleable, something that Tegetmeier, like Darwin resisted (Beer 55).

Tegetmeier's fame in his own day can be best be gauged from his obituary in the (*London*) *Times*, where he was referred to as "a practical breeder and writer on poultry, pigeons, and general natural history subjects" whose "article on 'Military Pigeon Posts' in *Nature* of February 4, 1892, [is] of permanent value" ("Obituary," *Times* 1912; also see Richardson). Indeed, citations of his work can be found well into the twentieth century (Gilbey iii; Edward Brown 2: 777; Jull 28). He was also one of Darwin's key correspondents, "whom he supplied with a good deal of material in the shape of skulls and skeletons, and for whom he carried out many experiments in breeding" ("Obituary," *Times* 1912).[1] Though, as James Secord observes, Tegetmeier was scrupulously paid and therefore slipped easily into the category of "assistant" or "journalist," he still worked in a way that was recognized at the time as

scientific ("Fancy" 77–78). Described somewhat disparagingly by Burleigh Taylor Wilkins in 1959 as "the lover of pigeons who recorded their behavior so meticulously, completely unaware that in so doing he would be contributing to the theories of Darwin" (37), he was nonetheless an authority on natural history and like Darwin is best understood as working within a wider expert community. As such, in his own publications, he positioned himself as a scientist (his various works normally carried his post-nominal letters as Fellow of the Zoological Society from 1866 and Member of the British Ornithological Union from 1873), and drew upon the specialist knowledge of others working in natural history.[2] In fact, *The Poultry Book* was in large part a compilation within which could be found, "the most eminent authorities on each particular variety"[3] (Tegetmeier, *The Poultry Book* iii).

With reference to Tegetmeier's work on pigeons and bees respectively, as Secord and Sarah Davis have argued, Tegetmeir combined the popular and the technical elements of natural history in his published works, and while engaging in a "mutual exchange of ideas" with Darwin (Davis 88), promoted the scientific knowledge gleaned by naturalists within the communities of hobbyists and breeders (Secord, "Fancy" 166, 172, 174–76). However, what is important here is not so much how a natural scientist like Tegetmeier managed his relationship with the public, but how the "borders between science and public, expertise and culture, come to be played out, reproduced, and/or transformed" (Nik Brown and Michael 20). As a corollary to this, Tegetmeier detailed human sensory experiences such as the bird's flavor, and thereby appealed to the "cultural commonplaces" (Nik Brown and Michael 19)[4] concerning the status of game as food in Victorian Britain:

> The flesh of the young Capercaillis . . . is superior to that of the Black Game, although apt to have a turpentine flavour, from its feeding on the leaves of the Scotch fir. Thousands of the birds are sent to into the London markets from northern Europe during the winter, being forwarded in a frozen condition. (Tegetmeier, *British Birds* 5: 4–5)

This combination of the scientific and rational with the sensory/experiential and in a publication of high visual impact was characteristic of Tegetmeier's work. As such, that work is best described as "practical naturalism": work, which sought, in his words, "to combine ornithological research with practical experience in . . . management" (Tegetmeier, *Pheasants: Their Natural History* iii). In this respect it is similar to the new "economic entomology," a sub-discipline that was developing within public science (Clark, "Bugs" 86). In addition, and more important to my concern here, Tegetmeier's work can be understood in the context of increasing public concern about cruelty to animals, including birds, in the second half of the nineteenth century.

This solicitude can certainly be seen in his revised and corrected three-volume *A Natural History of the Nests and Eggs of British Birds* (1896), originally written by Rev. F. O. Morris, illustrated with 248 detailed plates, mostly hand-colored, of eggs and nests. At the time, the collection of birds' nests and eggs was a well-established, if increasingly controversial, hobby in Britain. Take for example William Howitt's opening description of the practice of "birds'-nesting," sixteen years earlier, in *The Boy's Country Book* (1880):

> A great hue-and-cry has been raised against birds'-nesting. It has been denounced as cruel and savage; and boys have been warned against it in well-meaning books as a deadly sin . . . but the fact is, that while there are boys and birds'-nests, there always will be birds'-nesting. . . . It is an instinct, a second

> nature, a part and parcel of the very constitution of a lad. . . . What is spring, and what is the country without birds'-nesting? (57)

Howitt treats birds' -nesting as innate to boys and inseparable from boyhood. But, he goes on to argue, birds' nesting does not have to be cruel; the cruelty can be taken out of it simply by leaving the nests in place and the fledglings in peace. Boys, he argues, "are not naturally cruel, but they are thoughtless" (58); it is the parents' responsibility to teach them what to do: to civilize them, to make their approach to nature more careful and therefore more rational (58–60). Within dominant conceptions of masculinity, knowledge was something to be "mastered," and, if guided correctly, these early experiences of collecting were a way of demonstrating just such a mastery (Bristow 41–43). Here, in accordance with the Cartesian division human/animal (culture/nature) that dominated Victorian culture and placed women, children, and "savages" within the latter category, the boy is associated with the all-consuming instincts of animal nature. Given this human/animal boundary, it was only a guided rational approach that could make the boy fully civilized and therefore fully human. But where Howitt distinguished explicitly between the knowledge of adults and the experience of boys to achieve this transition and left the hobby itself within the domain of boyhood, Tegetmeier set out to prove that the hobby was now an accepted adult activity. To be recognized as such however, the process of collecting had to be appropriate, which meant that it had to be executed scientifically.

Every human being enjoys collecting, Tegetmeier begins by asserting, from the "untutored savage who collects beads and coloured rags to the most civilised connoisseur of the highest works of art." But, egg collecting, is no longer considered just another kind of "schoolboy pastime": "Oology has been elevated to the rank of an intellectual science. It is, if rightly followed, an important branch of natural history" (*Nests* 1: v). Citing Dr Elliott Cones, "the most eminent of American naturalists," who says "Ornithology and Oology are twin studies," Tegetmeier describes two methods of egg-collecting: one right and one wrong:

> That which is followed by many persons of collecting eggs, piercing them at both ends and threading them on a string, is scarcely justifiable. It is robbing the birds for no purpose whatsoever except for mere aggrandisement. The eggs so collected are perfectly worthless. (Tegetmeier, *Nests* 1: vi, vii)

A black and white etched illustration shows the correct tools to use, as the text sets out the best way to blow the eggs, index, date and store them, either on trays in "shallow drawers" or "in the nests themselves, which it is most important to collect and preserve" (Tegetmeier, *Nests* 1: vii). Fully recognizing that birds' nesting was a traditional hobby associated with country childhood, Tegetmeier drew on established authorities and specificity of technique to move the participant from boyhood to manhood: from "birds'-nesting" to "egg collecting," (despite the emphasis on using nests for display). Pristine nature is processed and catalogued by the skilled collector. In this way "Oology," a "civilised" art within science, overlay the rural game of "birds' nesting" and allowed Tegetmeier to distinguish between the taking of eggs for a rational purpose and the cruel irrational pleasures of pure greed, a distinction that rested upon (adult male) self control.

Throughout his discussion of egg collecting, Tegetmeier also genders the human relation of person to domestic fowl: the absolute divide separating the gendered pursuits of egg

collecting for the "higher" purposes of science or pleasure (masculine), and the low world of collecting the eggs of domestic fowl to eat (feminine) was a given (see Bourke 293).

Tegetmeier's revision of Morris's book addressed the craze for a rational "scientific" methodology that aped the taxonomic practices of the museums. As Kean notes, the middle class collected eggs, along with stuffed animals, reptiles and birds, in order to create their own "displays of dead wildlife" after those in the Natural History Museum, an enthusiasm that the working birds'-nesters supplied and the naturalist William Hudson later deplored in *Lost British Birds* (1894) (Kean 120). Tegetmeier's text, with its beautiful and striking plates, answered parallel desires among educated middle class audiences for the scopic pleasure of looking at eggs and nests while simultaneously acquiring some mastery of scientific knowledge. The collector who followed his recommendations could separate *him*self from "the greedy collector whose methods are as discreditable as his action is injurious" (Hudson, qtd. in Kean 118).

Meanwhile, his close association with scientific practice can be seen in Tegetmeier's provision of each bird's Linnaean and other classification (*Nests* 3: 8). Every bird's breeding habits – where they nested, the materials that they used, numbers of eggs laid, incubation period, and egg coloring – were then systematically described. In his introduction, he also details the structure of eggs and his discovery of the egg tooth, at which point his own place and practice within the discourse natural history emerges:

> the existence of this contrivance [the egg tooth] is not generally recognised and the writer had much pleasure in furnishing Sir William Flower with specimens illustrating its existence and use for exhibition in the Central Hall of the British Museum at South Kensington, where they are now displayed. (Tegetmeier, *Nests* 1: xii-xiii)

To have contributed original material for a display at the new museum, based on his own research, was to become a recognized authority within the scientific establishment and to his educated lay audience. Tegetmeier used science to reveal the hidden systems of the natural world and simultaneously to appeal to the shared cultural understanding of nature predominant in Victorian Britain: the "lay" or "surface" understanding of "nature as landscape, wilderness, plant and animal life" (Soper 180–81), as seen on public display.

We can see this lay understanding at work in the debate about the 1868 Sea Birds Protection Act, the first measure to protect wild birds and designed to save seabirds during the breeding season (Kean 113–14), which Tegetmeier participated in as an publicly trusted expert on wild birds ("The Presevation of Seabirds," *Times* 1869). Though the debate about cruelty to birds subsequently centered on the use of their feathers and bodies for display, as Kean notes, the Sea Birds Protection Act was significant because of its focus on the bids' habitat, in other words the countryside and coast (114). Through this Act, wild birds, such as those that interested naturalists like Tegetmeier, came to be caught up in a culture that increasingly treated the countryside as a site that must be protected for leisure (Sayer 155–71; Burchardt 89–94). This shift to the preservation of the wild, Kean argues, corresponded with changing attitudes to the land represented by the formation of bodies such as the Land Reform Association, formed in the 1870s, which argued for some areas to be left wild so that "in all classes . . . healthful rural tastes, and of the highest orders of pleasure" could be encouraged (Kean 114). Subsequently, the Commons Preservation Society and the National

Trust argued similarly that land, plants and wildlife "be left," as Kean says "in a state of wild natural beauty" for all to enjoy (114).

In the process, the birds themselves were anthropomorphized, as we can see in *A Natural History of the Nests and Eggs of British Birds*:

> The nest is something with which the will and energies of the bird are concerned. It expresses the character of the workman . . . and gives us a glimpse of the bird's mind and power to understand and adapt itself to changed conditions of life. The nest is always more or less the result of conscious planning and intelligent work. . . . Don't neglect the nests then. In them more then anywhere else lies the key to the mind and thoughts of a bird, the spirit which inhabits that beautiful frame and bubbles out of that golden mouth. And is it not this inner life, this human significance in bird nature, this soul of ornithology, that we are all aiming to discover? (Ingersoll, qtd. in Tegetmeier, *Nests* 1: xi)

In this citation we see sympathy for the bird treated as a being subject to the (natural) vicissitudes of environment, to which it responds as a creature with a mind capable of "conscious planning and intelligent work." Yet, it is (cultural) "human significance" that generates the true understanding of its frame and song. An essentially anthropocentric account, regardless of their beauty, the bird's "mind," "thoughts," and "spirit" expressed through its "nest," "frame," or "mouth" are not equivalent to human intellect or soul. Rather, they are a screen onto which human concerns such as those with class and race are projected, so that the bird's work for example should be read as "an index of its rank among birds – for in general those of the highest organization are the best architects" (Ingersoll, qtd. in Tegetmeier, *Nests* 1: xi). Though design in nature falls to the birds that make the nests, not to God, that design can only be measured within and by the human search for knowledge in this case via ornithology (see Daston 246–48). It is in this light that we should understand Tegetmeier's interest in materially and visually preserving birds' eggs and nests.

It is the beautifully rendered colored plates that immediately strike the reader of *A Natural History of the Nests and Eggs of British Birds* and place wild and domestic birds in the context of human culture. This is equally true of Tegetmeier's *The Poultry Book*.[5] The market for such publications was competitive.[6] The poultry-breeding hobby was popular and ranged across classes and genders.[7] What the books for this diverse audience had in common was not simply a focus on expert knowledge about their subject, grounded in its history and its natural history, but also an interest affording pleasure in visual effects that drew from genre art. *The Poultry Book's* reception, like *A Natural History of the Nests and Eggs of British Birds*, depended as much on its visual impact as the authority of the written text. As Stephanie Moser reminds us, scientific illustration was vital in drawing audiences into, what Lynch and Woolgar have termed, "agreement" with the theories and specialisms placed before them. Visual representation was key to the communication of ideas and formation of knowledge within scientific discourse, to the extent that such imagery fulfilled a function that positioned the information it conveyed as unchallengeable (Moser 186–87). Darwin used illustrations in *The Expression of the Emotions in Man and Animals*, including one of a "Hen driving away a dog from her chickens. Drawn from Life by Mr Wood" to show how the birds ruffle their feathers and attack when they or their chicks are threatened (102). Though the written text in this case suggests that the feathers do not always fully extend, the illustration[8] gives the most extreme case to persuade the reader of the bird's terror (101–04). Illustration was equally commonplace and fulfilled a similar discursive purpose within the

non-specialist periodical press with which serial publications like Tegetmeier's had a close relationship, so that it was not only in their language, but also their shared visual culture that the worlds of science and literature overlapped.

The advertising for his closest competitors' work certainly indicates that the audience for texts like Tegetmeier's expected a visual spectacle. The publication of the third part of Lewis Wright's *The Illustrated Book of Poultry* was publicized in the *Times* for instance via its review in the *Glasgow Herald*, where it was described as "far and away the finest book that has ever been published on poultry" ("New Books and Editions," *Times* Jan 1877). A statement that was expanded in the next advertisement to include the assertion that: "The 50 coloured portraits – full quarto size – are magnificent, and the wood cuts are as fine in their way as the coloured portraits themselves" ("New Books and Editions," *Times* Nov. 1877). Naturally then, Tegetmeier sought to include high quality images in his own book on poultry. Darwin himself suggested the immense value of including quality images in his 4th December 1856 letter to Tegetmeier:

> Do not trouble yourself to write me descriptions of Fowls, as I shall see them in time in Poultry Book . . . I am *extremely* glad that you are willing to describe all the Poultry, which I can get, in the Poultry Book, as I am sure it will be well done; & my only object is to know what amount of difference there is in the Fowls of different parts of the world. (Burkhardt 6: 295–96)

Though this refers to an earlier, incomplete edition,[9] this shows both the importance of the subject and the significance of the pictorial, as standing in place of the written, text within scientific as well as popular discourse. In addition, one of the first joint secretaries (with Andrew Halliday, from 1859 to 1864/65) and "father" of the bohemian Savage Club (Richardson 121–23), Tegetmeier was very well connected with the leading artists of his day.[10]

By the time that *The Poultry Book* was published, its illustrator Harrison Weir (1824–1906) was already well known. Having worked initially on the new *Illustrated London News* as an engraver, he later contributed images across the range of general periodicals and was especially well-known for his images of animals (Ritvo, *Animal Estate* 116–17). On his death, his *Times* obituary observed that it was through "his illustrations that he acquired and maintained his great popularity" ("Obituary," *Times* 1906). His work for popular and educational natural history books such as the Revd. J. G. Wood's *Illustrated Natural History* (1861), Mary Howitt's *Our Four-Footed Friends* (ca. 1880), and Mrs. R. Lee's *Anecdotes of the Habits and Instincts of Animals* (1852) and *Anecdotes of the Habits and Instincts of Birds, Reptiles and Fishes* (1853) additionally reflects both his interest in raising the standard of publication for children and those who could not afford the texts produced by the high end of British publishing and his interest in animal welfare (Ingpen and Rogerson, *ODNB*; "Obituary," *Times* 1906; "Illustrators").[11] The portraits of poultry carefully observed by Weir represent the birds as models of their breed. They are taxonomic in that they help to classify types of fowl, as Darwin anticipated. But they also make the familiar spectacular by following an alternative set of conventions that emerged from an eighteenth-century tradition originally associated with sport and later with animal shows, one that celebrated beauty and breeding success through animal portraiture. More specialized in the Victorian period, this practice evolved its own aesthetic, one that at times led those artists working with more agricultural subjects to exaggerate the animals' fine qualities, such as extra weight or fat,

qualities recognized by bodies such as the Royal Agricultural Society of England (Vaughan 11; Ritvo, *Animal Estate* 58–59). These markers came to act as an aid to classification and identification. In the case of prize-winning cattle, for example, artists focused on color and coat markings to single out both the breed and specific individuals within it, while farmers selected for or against such markers depending on their association with positive or negative qualities such as milk yield (Baker 14, 17–18).[12] This type of image therefore belongs as much to the discourse of scientific agriculture as to the practices of art and the fancy (Ritvo, *Animal Estate* 45–81; Ritvo, "Chillingham" 1–22).

The images of poultry in Tegetmeier's and Weir's *The Poultry Book*, celebrating the birds's finery draw on related Victorian cultural commonplaces. In "Partridge Cochins" for instance a hen and a cock are posed to display their plumage and stand in what appears from tufts of grass, old brick paving and worn wooden planking to be the corner a farmyard (Figure 11). Given the desire to classify the breeds for the fancy, it was necessary to show both a cock and a hen in these plates. But it was not necessary to show them with a background at all, let alone a naturalistic setting with rural connotations. At shows, the birds would have been displayed in cages (Long 147–48), and elsewhere Weir provided very little contextual detail. In part, the setting reflects Tegetmeier's belief that birds should be "allowed a free range":

> Chickens that are reared in the neighbourhood of trees and coppices very often take to roosting in the branches during the mild weather of summer and early autumn, and are always found to be in much hardier plumage and better condition than those that roost in houses. (Tegetmeier, *The Poultry Book* 7)

In this respect Tegetmeier employed natural history to "improve" agricultural practice and therefore profitability. In another respect, Weir's very pastoral image resonates with the chicken as a model of naturalization, domestication and tameness. These birds do not fly away when free; they (choose to) inhabit the human world, which protects them and gives them human meanings.

In "White Leghorns" the use of established rural imagery becomes clearer (Figure 12). Three birds, a cock in the foreground and two hens – one in the foreground and one in the mid-ground – scratch in the open on a lane among fields with two straw or hayricks alongside a barn in the background. This picture resembles Weir's 1862 illustration for "Praise of Country Life" by Joshua Sylvester (Figure 13), in which hens and chicks gather round a crowing cock on a fence in the foreground with an idealized thatched country cottage in the distance (Wilmott 19). As Scholtmeijer has argued, farm animals were commodities (81–82), but chickens also carried long-standing associations with the human virtues of "comfort, wisdom and humility" (Hardwick 92). As such, Weir's illustrations encouraged the reader to imagine a story about the birds depicted in the manner of genre art, just as they drew on the common cultural understandings of the rural idyll that captured the country as a site of quintessential "Englishness."

Weir's poultry are truly homely and domesticated, thoroughly British birds. As such, the fowl belonged to a wider public or lay taxonomy which "accords the highest significance to the degree to which a given plant or animal has fallen under human influence and has been incorporated into human civilization" (Ritvo, "Garden" 364). Yet, the popular hierarchy to which Tegetmeir subscribed conflicted with Darwin's scientific understanding of artificial

Figure 11. Harrison Weir, "Partridge Cochins." Illustration, from W. B. Tegetmeier, *The Poultry Book: Comprising the Breeding and Management of Profitable and Ornamental Poultry; to Which is Added "The Standard of Excellence in Exhibition Birds"* (London: George Routledge and Sons, 1873). Courtesy of Leeds University Library.

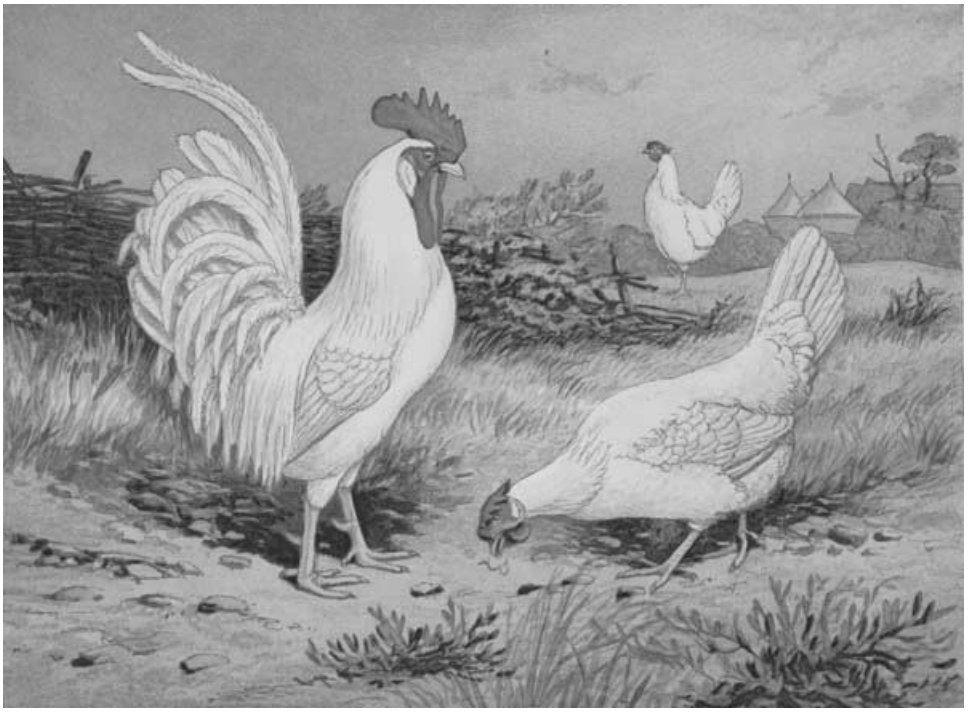

Figure 12. Harrison Weir, "White Leghorns." Illustration, from W. B. Tegetmeier, *The Poultry Book: Comprising the Breeding and Management of Profitable and Ornamental Poultry; to Which is Added "The Standard of Excellence in Exhibition Birds"* (London: George Routledge and Sons, 1873). Courtesy of Leeds University Library.

selection as inferior to natural selection (Beer 55). Thus, in Tegetmeier's publications the chicken was accorded low standing.

Even in lay terms, domestic fowl did not have the same direct metonymic and metaphorical associations as the striking (and masculinized) Chillingham cattle, which Ritvo has argued "helped to shape British notions about such vexed topics as race, descent, and pedigree . . . [i.e.] questions of origin and identity" ("Chillingham" 2, 16). Nonethless, the hobby of breeding fancy poultry for exhibition and display, which began after Queen Victoria was presented with some Asiatic Cochins in 1843 (Baker 17–18),[13] and its attendant paraphernalia – specialist publications, portraits, shows, and rules – belonged to the related public interest in hybridization,[14] acclimatization, and naturalization.

As David Barnaby has suggested, the "development of better breeds of food animals and draught animals was a matter for the national economy" (ix). This husbandry coincided with attempts to introduce new species from abroad, which might be interbred with domestic animals to increase their efficiency and usefulness. This debate had particular resonance in a society that defined "culture" as its own and was obsessed with racial taxonomies and hierarchies produced in part by scientific discourse. Indeed, Tegetmeier participated actively in the debates about telegony – the theory that the offspring of any female would be

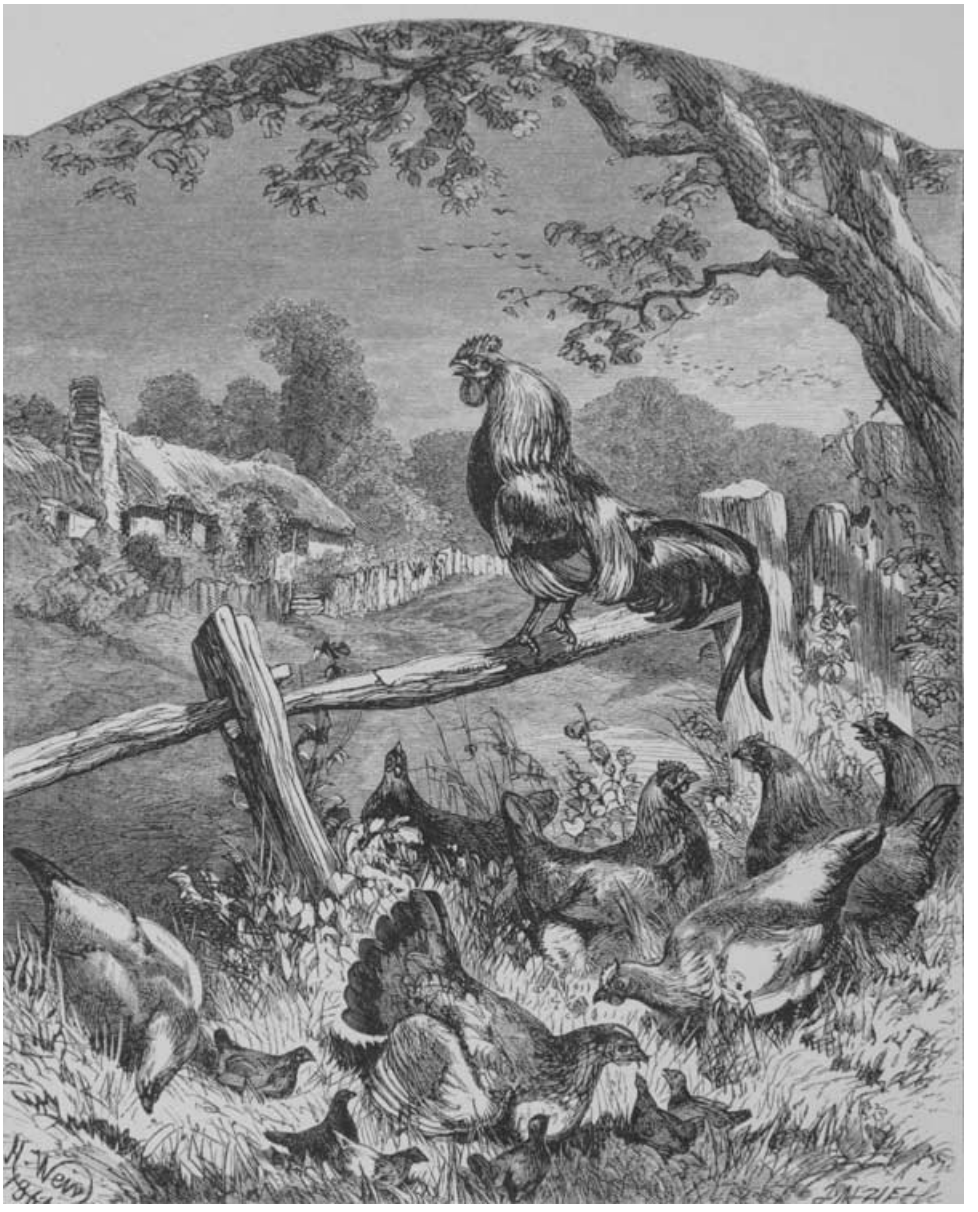

Figure 13. Harrison Weir, "Praise of Country Life." Illustration, from *English Sacred Poetry of the Sixteenth, Seventeenth, Eighteenth, and Nineteenth Centuries*, ed. Robert Aris Wilmott. Illustrated by Holman Hunt, J. D. Watson, John Gilbert, J. Wolf, etc., engraved by the Brothers Dalziel. (London: Routledge, Warne and Routledge 1862). Courtesy of Leeds University Library.

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perpetually influenced by the characteristics of the first male that she mated with, and vice versa – that were captivating both the public and scientists at the time. He corresponded on this as editor of the *Field* with J. Crosser Ewart, Professor of Natural History at the University of Edinburgh – who almost bankrupted himself in the process of demonstrating that it was invalid through his experiments with Plains Zebras and horses (Barnaby ix-xi).[15] Poultry breeding participated in this drive for better stock. It is therefore striking that the chicken was far from being considered as a "domestic" bird:

> No one seems to know at what period our Common poultry was introduced into England, for these birds were abundant in the earliest historical times among the Druids, Greeks and Romans. They came originally from Asia, where they are now in a wild condition. (Lee, *Anecdotes of Birds* 160–61)

In asking the implied question "when poultry were introduced to England?" Mrs. Lee joins in the debate about naturalization. In *Pheasants, Their Natural History and Practical Management*, Tegetmeier makes a similar move when discussing the introduction of pheasants to England:

> Though probably its acclimatisation does not go further back than the Norman Conquest, yet it is possible that our Roman invaders may have imported it at a much earlier period, with other imperial luxuries. (*Pheasants: Their Natural History* 28)

Tegetmeier then quotes at length an article based on documentary evidence and published in *The Ibis* by Professor Boyd Dawkins, an article by Rev. James Davis in the *Saturday Review*, and Mr Harting's "Ornithology of Shakespeare" on the history of pheasants, now "perfectly wild" in some counties (*Pheasants: Their Natural History* 28–35). In tackling the history of these birds, Tegetmeier draws them away from the wild and into human culture, their history being the history of their use by their human managers and their plantation within a new environment where they are read as fully naturalized, entirely at home, despite their origins. Tegetmeier's focus on "acclimatisation" makes explicit the resonance that such a history had with questions of how best to import/export and make use of diverse animals for the Empire. The significance of this debate for the relationship between humans and other animals comes clearest in Tegetmeier's discussion of domestication in the same volume:

> The instinct of domestication is one of the rarest possessed by animals. Man has been for some thousands of years capturing, subduing, and taming hundreds of different species of animals of all classes; but of these the number that he has really succeeded in domesticating does not amount to fifty. A very large proportion of animals are capable of being tamed, and rendered perfectly familiar with man; but this is a totally distinct state from one of domestication. (*Pheasants: Their Natural History* 24)

Unlike pheasants, which cannot be tamed, chickens depend on their domesticated, dependent relation with humans:

> the allied species, the jungle fowl (Gallus ferrugineus), the original of our domestic breeds of poultry, if reared in confinement, becomes immediately domesticated, the young returning home at night with a regularity that has given rise to the proverbial saying that 'curses, like chickens, come home to roost.' (Tegetmeier, *Pheasants: Their Natural History* 24–25)

Where the pheasant and other game birds appear in his general ornithological work as semi-domesticated birds, as with the discussion of birds' nesting, the chicken does not appear in the book at all, except for its egg being used as an exemplar for the strength of all eggs (Tegetmeier, *Nests* xi–xii).[16]

Not an exotic bird to the city dweller, chickens could be said to be ubiquitous in the Victorian's world. Mrs. R. Lee suggested such ordinariness when she observed: "they are now such every-day objects, extending even to London cellars, that they are not thought worthy of observation" (160). Because of its food value, the chicken belonged intrinsically to the world of human culture. But, though a low bird for Tegetmeier, a feminized bird with eggs that did not belong Oology, there was nonetheless a fascinating association for him between the birds' linguistic and natural histories, histories which in turn made their sensitivity to the British climate and therefore their management both explicable and necessary. As he noted in his *Profitable Poultry; Their Management in Health and Disease*:

> our common domestic fowls are destitute of any particular English name, [which] points to their foreign origin; and, although in the course of many generations, they have become greatly inured to the rigours of our climate, they still retain so far their original constitution as to require the protection of a habitation during, at least, great part of the year. (Tegetmeier, *Profitable* 3)

Poultry may have been ubiquitous, but they still had a cultural origin in a (historical) process of plantation. As such their persistent natural characteristics, such as the need to be protected from inclement weather, revealed for Tegetmeier the dynamic processes and constraints that came into play when humans sought and failed to manipulate nature for their own ends. Chickens may have been successfully imported to England to be useful to humans, or even bred up artificially to be fancy, but for Tegetmeier, as for Darwin, nature was not altogether malleable.

Though he had a high regard for nature, and did not see it as something that was entirely malleable, Tegetmeier was not a conservationist. In serving the agricultural interest, for instance, he was quite prepared to destroy birds that he saw as "pests,"[17] and he was a supporter of cock-fighting (Secord, *ODNB*). Nonetheless, though he assumed that humans needed chickens for eggs and meat, he was against any act that he perceived to be "cruel" and was quite clear that cruelty was best avoided in poultry-keeping through the application of methods based on rational scientific observation. In *Profitable Poultry* he stresses that chicks must be left with the hen after hatching:

> I am aware that these recommendations to leave natural operations to nature are contrary to what are frequently found in books, but I am merely writing the results of my own experience, and I have always found the more the hatching hens are meddled with, the worse the result. (Tegetmeier, *Profitable* 21–22)

Throughout his work he sought the most efficient way to manage poultry for human purposes, given the natural habits and needs of the birds. On this basis, for example, Tegetmeier did not believe in monoculture. He stated explicitly that the mass rearing of poultry for profit would always fail because the birds need a large range – at least an acre per hundred fowls – while winter confinement results in "the want of fresh air, natural green and insect food, [which produces] unfortunate results" (Tegetmeier, *The Poultry Book* 9–10, 384).[18]

Though domesticated for (agri-)culture and bred for the fancy, he always regarded poultry as essentially natural creatures.

Writing about the birds in terms of their behavior, physiology, and taxonomy, he drew extensively on the emergent technical discourse of ornithology, reinterpreted for the benefit of non-specialists. Tegetmeier's work was thus grounded firmly in what I have called "practical naturalism" – an observation and control of birds that may have had more in common with economic entomology than with ornithology (Brassley 235–51; Clark, "Bugs" 88–114). As a "practical naturalist" Tegetmeier disseminated scientific knowledge to horticulturalists, agriculturalists, hobbyists, and the public. He took the spaces of agriculture to be contiguous with those of nature, and farming's subjects to be natural history's subjects. The way to get the best from the birds being farmed, in Tegetmeier's view, was to apply to their management what had been gathered from the observation of the creatures in their natural state. Thus, he participated in the wider cultural shift that captured the wild for tamed nature as understood through human culture: preservation, recreation, study, and exploitation. In this way, his work belonged to wider imperialist conceptions of science that used it as a tool to explore and develop the Empire's natural resources: an approach that sought to rebalance nature through "the technological fix" and sought material gain through adaptation, plantation and hybridization (Clark, "Bugs" 113–14; Kumar 51–66). Tegetmeier's approach to the natural world reveals how science as an instrument of empire could be brought home to the farm and the fancy.

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NOTES

1. Moore posits that Tegetmeier was one of Darwin's six most regular correspondents, excluding Darwin's family and publishers. That correspondence totals 186 letters (576).
2. Tegetmeier's work was widely available. His *Pigeons: Their Structure, Varieties, Habits and Management* for instance was advertised in the *Times*, in 1867, as "an entirely new work, with original plates by Harrison Weir, beautifully printed in colour by Leighton Brothers"; available in "monthly parts" 1*s*. each, "or by post 13 stamps" ("Classified Advertising," *Times* 1867, A). His citation in a serial essay, "The Boy's Own Pigeon Loft and Dovecot" for the *Boy's Own Paper* ("The Boy's Own Pigeon Loft," Part VIII 512; Part IX 547–48) gives a sense of his reach. He produced a number of related works on poultry, including *Poultry for the Table and Market versus Fancy Fowls with an Exposition of the Fallacies of Poultry Farming* (1892), which was edited down to *The Cottager's Manual of Poultry Keeping: Being Chapters from W. B. Tegetmeier's Poultry for the Table and Market versus Fancy Fowls* (1894). As an ornithologist, he also revised and corrected the fourth edition of Rev. Francis Orpen Morris's *A Natural History of the Nests and Eggs of British Birds* (1896) and the fourth edition of Beverley Robinson Morris's *British Game Birds and Wildfowl* (1895).
3. These "authorities" described in the Preface, though unnamed within the body of the work, were "Mr Edward Hewitt, [a poultry judge] several articles; Mr. R. Teebay, on breeding some types; Mr Douglas on rearing Dorkings; Mr Zurhorst on French breeds; Mr P. H. Jones, Polish birds; Dr F. Horner, Bantams; Mr Balance and Rev. A. G. Brooke on Malays." Meanwhile, "other authorities will be found to have given their experience in the several chapters" (Tegetmeier, *The Poultry Book* iii).
4. In their analysis of the debate surrounding xenotransplantation, Brown and Michael observe that "scientists . . . operate as if within the citadel. This is evident in their continued differentiation between

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science and the public, especially in the technical capacity to judge similarity between porcines and humans. This is specialist knowledge being made available to 'untutored publics.' Yet, simultaneously, they are drawing on cultural commonplaces concerning, for example, the status of the pig as a source of food. They are aligning themselves with, and rearticulating, what they hope to be the 'dominant' cultural commonplaces (hence marginalizing animal advocacy arguments)" (19).

5. An earlier poultry publication was called *Profitable Poultry; their Management in Health and Disease* (1854), and Tegetmeier edited *The Standard of Excellence in Exhibition Poultry, Authorized by the Poultry Club* (1865) – the American standard was added to this in 1874.
6. *The Poultry Book*'s main rival, for instance, Lewis Wrights's *The Illustrated Book of Poultry: with Practical Schedules for Judging, Constructed from Actual Analysis of the Best Modern Decisions*, illustrated by J. W. Ludlow, (which carried fifty chromolithograph color plates and ran to 591 pages) sold at 6*d*. a month, 31*s*.6*d*. in a cloth bound edition and £2.2*s*. in Moroccan, with its color illustrations, and in a cheap edition (with specially prepared black and white illustrations) for 10*s*.6*d*. These publications ran alongside other, less richly illustrated, texts such as *Bird-Keeping: a Practical Guide for the Management of Cage Birds* (1869), which Kean argues was one of the first pet books to focus on birds (113).
7. For example, Elizabeth Watts, *Poultry: an Original Practical Guide to the Breeding, Rearing, Feeding and Exhibiting* (1867), advertised in the *Times* on Wednesday 10 April 1867 at price 1*s*., postage 3*d*.
8. After Edwin Landseer's *Protection*, (c. 1863)
9. *The Poultry Book; Comprising the Characteristics, Management, Breeding and Medical Treatment of Poultry*, illustrated by H. Weir, was part-published in 1856 by Wingfield and Johnson, but the edition remained incomplete due to the collapse of the publisher (Burkhardt Vol. 13: 100, 176).
10. An article on "The Savage Club" in the *Times*, 8 March 1880, describes a dinner held by the Lord Mayor of London for "the members of the savage Club and other leading representatives of literature, art, and the drama . . . in the Egyptian-hall of the Mansion-house." The 320 guests included Charles Dickens, John Tenniel, Luke Fildes, and Hubert von Herkomer, as well as Tegetmeier.
11. Given the period, this last was not compromised by the fact that his first show at the Royal Institution in 1845 was of an oil painting of a hunted wild duck: *The Dead Shot*. Weir was himself a poultry-keeper, and produced *Our Poultry and All About Them: their Varieties, Habits, Mating, Breeding, Selection and Management for Pleasure and Profit* (1902), which included almost 400 illustrations. Our *Poultry and All About Them* was re-issued in 1988 as *Harrison Weir's game fowl*.
12. In this respect, Baker suggests, they differ from images of named dogs, which were more commonly painted as pets or favored sporting companions (17–18).
13. These laid brown eggs, which explains the eventual aesthetic dominance of brown eggs in the British marketplace.
14. In December 1862 Darwin asked Tegetmeier to cross a Spanish Cock with some white Silk hens to test their offspring's fertility when tackling the question of sterility in hybrids (Burkhardt Vol. 10: 631).
15. The question was given apparent support through Lord Morton's early nineteenth-century experiments, when he mated a Quagga stallion with an Arab mare, which subsequently gave birth, it seemed, to foals that bore similar characteristics to the original Quagga, even when the mare had been mated with an Arab stallion (Barnaby ix–xi).
16. Tegetmeier, explains that eggs are extremely strong "end to end," and that this can be tested with a hen's egg, and relates an anecdote about demonstrating this to a friend, which involved throwing eggs from "out of a College window on to the lawn" (*Nests* xi–xii).
17. Hence in 1899, he published *The House Sparrow-the Avian Rat-, in Relation to Agriculture and Gardening, with Practical Suggestions for Lessening its Numbers* with Eleanor A. Ormerod, herself an economic entomologist and the honorary consulting entomologist to the Royal Agricultural Society of England from 1882 to 1892 (Clark, *ODNB*; Sheffield 139–94).
18. The history of the poultry industry in Britain is summarized by Thirsk (189–91).

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