

Looking and Learning in the Victorian Classroom

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Abstract:

Observation—what to observe and how to observe it—was a frequent topic of discussion in the public discourse around education in nineteenth-century Britain. But in the context of the schoolroom, what did ‘observation’ entail? What, exactly, were students supposed to be looking for? And how was the relationship between looking and learning understood and imagined? To answer these questions, this essay draws on British curricular codes, school inspectors’ reports, schoolbooks, and texts in educational psychology in order to describe three ways that Victorian educators may have approached perception in the classroom. These three approaches to visual pedagogy offer possibilities within a spectrum of approaches to vision and visuals, ranging between: 1) a pedagogical approach that asserts the primacy and power of observation in the learning process; 2) an approach that employs vision and visuals as important accessories to learning; and 3) an approach that employs vision and visuals to secure student attention but does not make use of observation as an integral part of the learning process. Though the printed lessons, inspectors’ reports and curricular codes surveyed here may or may not reveal how individual children were taught, or what they ended up learning, they have potential to tell us a great deal about adult anxieties around vision and visuals, and they offer examples of what some Victorians believed the powers of observation could accomplish. For this reason, Victorian practices of teaching and learning offer a valuable resource for understanding the ideals and anxieties that motivated Victorian aesthetes like John Ruskin and his followers—some of whom were also educationists.

And now, reader, look round this English room of yours, about which you have been proud so often, because the work of it was so good and strong, and the ornaments of it so finished. Examine again all those accurate mouldings, and perfect polishings, and unerring adjustments of the seasoned wood and tempered steel. Many a time you have exulted over them, and thought how great England was, because her slightest work was done so thoroughly. Alas! If read rightly, these perfectnesses are signs of a slavery in our England a thousand times more bitter and more degrading than that of the scourged African, or helot Greek.¹

John Ruskin’s exhortation to readers to ‘look round’ their living rooms, from *Stones of Venice*, offers one of the most well-known object lessons of the Victorian period, and sums up two key principles of object lesson pedagogy: first, that one can learn from first-hand observation of objects, and second, that there

¹ John Ruskin, ‘The Nature of Gothic’, in *The Works of John Ruskin*, Vol. 10, ed. by E. T. Cook and Alexander Wedderburn, 39 vols (London: G. Allen, 1904), pp. 180-269 (p. 193).

are ‘right’ and ‘wrong’ ways to look. Today, the term ‘object lesson’ is used in general terms to describe any instance of a concrete example that illustrates an abstract concept, but in the nineteenth century, the object lesson was a specific pedagogical method, and it can tell us much about how Victorian educationists and psychologists understood the relationship between observation and learning. Introduced by the Swiss educator Pestalozzi around the turn of the nineteenth century, object lessons depended on first-hand observation of common objects, and the purpose was to cultivate habits of attentive observation and inquiry, rather than to impart information. Instead of organizing a lesson around facts to be learned, a teacher giving an object lesson would prompt students to make their own observations about an object—much in the way that Ruskin encourages his readers to look for themselves at their furnishings.

Ruskin’s famous passage from *Stones of Venice* is not typically described as an ‘object lesson’. Art historian Tim Barringer and literary scholar Dina Birch both provide extended readings of the chapter from which this passage originates, ‘The Nature of Gothic’, and point to its status as one of the ‘founding texts of British socialism’.² But, as Barringer and Birch explain, ‘The Nature of Gothic’ also played a role in British education, and was adopted as a manifesto for the Working Men’s College when it was founded in 1854.³ ‘The Nature of Gothic’ also describes Ruskin’s own pedagogical practices, many of which resemble object lesson pedagogies. As Sara Atwood and Kristin Mahoney have shown, the emphasis throughout Ruskin’s drawing courses at the Working Men’s College in the 1850s was on close observation; systematic instruction aimed at achieving ‘perfectness’ in a finished drawing was avoided entirely.⁴ Much like the object lesson, the purpose of drawing in such classes was to promote attentive observation and inquiry, not to impart information. And as Atwood has documented, Ruskin frequently provided specimens to his students and to schools in order to facilitate a kind of learning that depended on first-hand observation.⁵

Though Ruskin’s ideas about labour and education resonate with the theory and practice of the object lesson, the connection between the two has not been discussed in the literature on Ruskin.⁶ This absence is not surprising, since far

² Tim Barringer, *Men at Work: Art and Labour in Victorian Britain* (New Haven, CT: Yale University Press, 2005), p. 255; and Dinah Birch, *Our Victorian Education* (Malden, MA: Blackwell, 2008), p. 140. Both Barringer and Birch use the same phrase.

³ ‘The Nature of Gothic’ circulated as a pamphlet at the inaugural lecture for the Working Men’s College. See Barringer, p. 255; Birch, pp. 68 and 140-45; Sara Atwood, *Ruskin’s Educational Ideals* (Burlington, VT: Ashgate, 2011), p. 52; and Kristin Mahoney, ‘Work, Lack, and Longing: Rossetti’s “The Blessed Damsel” and the Working Men’s College’, *Victorian Studies*, 52.2 (2010), pp. 219-48 (p. 223).

⁴ Atwood, pp. 51-55; and Mahoney, pp. 226-27. See also Barringer, p. 143; and Birch, pp. 140-43.

⁵ Atwood, pp. 36, 126-27, and 156-57.

⁶ For example, in *Ruskin’s Educational Ideals*, Atwood writes that Ruskin’s approach was ‘a far cry from the rote learning, mechanical catechisms, and object lessons that characterised all but the most progressive mid-Victorian schoolrooms’, and thus pits Ruskin against one

less attention has been given to object lessons than to Ruskin in existing scholarship.⁷ Furthermore, while Ruskin is typically treated as a unique figure, object lessons became standardized and pervasive over the course of the century. But putting these two areas of study together helps contextualize Ruskin's ideas within other discourses of his time, while also providing an expanded understanding of Victorian vision and visuality that moves beyond singular, exceptional, and exceptionally prolific figures like Ruskin. The aim of this essay is to do exactly that, by moving away from Ruskin's already well-known writings in order to consider a wealth of historical material describing the ways that vision and visuals were employed in the British educational system in the nineteenth century, when education was increasingly taken up as a public concern.

Within the context of this growing educational system, observation—what to observe and how to observe it—was a frequent topic of discussion. Among nineteenth-century educationists, individual observation seemed to offer an antidote to an apparently passive mode of rote learning,⁸ but the emphasis on observation in educational discourse also raises questions about the visual practices of Victorian schoolteachers and schoolchildren. In the context of the schoolroom, what did 'observation' entail? What, exactly, were students supposed to be looking for? And how was the relationship between looking and learning understood and imagined?

My research shows that a range of answers to these questions circulated in the Victorian period, and thus contributes to scholarship on Victorian vision and visuality that has sought to move away from overarching, paradigmatic explanations of visual experience by paying attention to 'individual visual encounters' and seeking a more 'pluralistic understanding of polydynamic

version of the object lesson (p. 88). One study that has drawn connections between the object lesson and Ruskin's approach to observation is Melanie Judith Keene, 'Object Lessons: Sensory Science Education 1830-1870' (unpublished doctoral thesis, Darwin College, University of Cambridge, 2008), pp. 42-43, 91-92, and 255.

⁷ Recent scholarship that focuses on object lessons includes Sarah Carter, *Object Lessons: How Nineteenth-Century Americans Learned to Make Sense of the Material World* (New York, NY: Oxford University Press, 2018); Keene, 'Object Lessons'; Andrea Korda, 'Object Lessons in Victorian Education: Text, Object, Image', *Journal of Victorian Culture*, forthcoming, <doi: 10.1093/jvcult/vcz064>; and Parna Sengupta, 'An Object Lesson in Colonial Pedagogy', *Comparative Studies in Society and History*, 45.1 (2003), pp. 96-121.

⁸ For discussions of rote learning in Victorian education, see Birch, pp. 26-28; Sheila Cordner, *Education in Nineteenth-Century British Literature: Exclusion as Innovation* (New York, NY: Routledge, 2016), pp. 7-10; Henry Midgley, 'Payment by Results in Nineteenth-Century British Education: A Study in How Priorities Change', *The Journal of Policy History*, 28.4 (2016), pp. 680-706 (pp. 692-95); Catherine Robson, *Heart Beats: Everyday Life and the Memorized Poem* (Princeton, NJ: Princeton University Press, 2012), pp. 57-64; Janice Schroeder, 'Victorian Education and the Periodical Press', *Victorian Periodicals Review*, 40.1 (2017), pp. 679-85 (p. 683); and Sarah Winter, *The Pleasures of Memory: Learning to Read with Charles Dickens* (New York, NY: Fordham Press, 2011), pp. 243-54. The literature on Ruskin also discusses his criticism of rote learning, and particularly of the mechanical approach to drawing promoted at the South Kensington School of Art. See Atwood, pp. 46-47; Barringer, pp. 143-44; and Mahoney, pp. 225-28.

[visual] “experiences”⁹ This article contributes to these efforts by taking up a different discursive context—that of the educational system—and examining the wide range of approaches to vision and visuals that circulated within that context. In contrast to scholarship that attends primarily to scientific, literary, or artistic contexts, a focus on educational contexts, especially at a time when the British educational system was expanding and thus reaching increasing proportions of the population, provides an opportunity to examine vernacular approaches to vision and visuality.

In what follows, I begin with an overview of Victorian visual pedagogies by concentrating on the introduction and codification of object lessons in Britain’s curricular code, as described in annual codes and school inspectors’ reports. Next I describe three ways that Victorian educators approached perception in the classroom: ‘metaperception’, ‘voluntary perception’, and ‘spontaneous perception’. The names I’ve chosen for these approaches reflect the discourse of nineteenth-century educational psychology, an emerging field that developed alongside the growth of state-funded education in Britain. This is not an exhaustive account of how vision was deployed in nineteenth-century schools; we will never really know what happened in each and every classroom, nor will we know what individual students absorbed from their lessons. As Jacqueline Rose explains in *The Impossibility of Children’s Literature*, we learn very little about children through stories intended for them. Instead, children’s literature and, in this case, lessons intended for children tell us much about adult concerns and ideals.¹⁰ While the lessons may or may not reveal how individual children were taught, or what they ended up learning, they tell us a great deal about adult anxieties around vision and visuals, and offer examples of what some Victorians believed the powers of observation could accomplish. For this reason, Victorian practices of teaching and learning offer a valuable resource for understanding the ideals and anxieties that motivated Victorian aesthetes like Ruskin and his followers—some of whom were also educationists.¹¹ I will return to this point in the final section of the essay, where I briefly return to Ruskin’s writings to emphasise the connections between aesthetic and educational discourses, which

⁹ Martin Willis, *Vision, Science, and Literature: 1870-1920: Ocular Horizons* (Pittsburgh, PA: University of Pittsburgh Press, 2016), p. 5; and Jonathan Potter, *Discourses of Vision in Nineteenth-Century Britain: Seeing, Thinking, Writing* (London: Palgrave Macmillan, 2018), p. 1.

¹⁰ Jacqueline Rose, *The Case of Peter Pan, or, The Impossibility of Children’s Fiction* (Philadelphia, MA: University of Pennsylvania Press, 1984), pp. 1-2.

¹¹ In referring to Victorian aesthetes, I follow Diana Maltz’s use of the term ‘aestheticism’, which depends on the observation that ‘British aestheticism was not one coherent movement, but actually encompassed several sub-movements with often contradictory agendas’ (p. 20). Maltz focuses particularly on ‘missionary aesthetes’, who ‘believed that to live an aesthetic life in a practical sense required a commitment to organized movements’ (p. 2). Some of these aesthetes were involved in initiatives in education. See Diana Maltz, *British Aestheticism and the Urban Working Classes, 1870-1900: Beauty for the People* (London: Palgrave Macmillan, 2006).

both included concerns about an onslaught of visual distractions in the nineteenth-century visual environment.

Visual Pedagogies from 1839 to 1895

In 1839, Parliament formed the Committee of Council on Education to distribute government grants to schools and oversee the inspections that came along with funding.¹² Inspectors' reports, published annually along with the Minutes of the Committee of Council on Education, are instructive sources for considering the role of visuals and visuality in the Victorian schoolroom. Beginning with the first round of reports in the early 1840s, inspectors consistently expressed a concern about the mechanical, rote learning they observed in classrooms.¹³ To address this apparent problem, inspectors frequently recommended the use of illustrations and student observation, which were understood to promote genuine comprehension and deep learning. For example, one inspector noted that 'to children, mere verbal explanations, as every one will perceive, are of no use whatever; but when practically illustrated before their eyes by experiment, they become not only one of the most pleasing sources of instruction, but absolutely one of the most useful'.¹⁴ Inspectors also recommended the use of pictures, maps, and blackboard drawings, as well as object lessons.¹⁵

Object lesson pedagogy built on the principles of faculty psychology, which understood the mind as made up of individual faculties that must be strengthened through exercise. The faculties were envisioned in a hierarchy, with sense perception forming the first of the faculties and thus requiring cultivation in early education. Once the faculty of perception was mastered, students could rely on the materials gathered through their perception to fuel other intellectual faculties, moving on to cultivate memory, conception, analysis, abstraction, imagination, classification, judgment and reasoning.¹⁶ In their earliest

¹² For details regarding the expenditure of grants, see James Kay-Shuttleworth, *Memorandum on the Present State of the Questions of Popular Education* (London: W. Clowes and Sons, 1868), p. 7-11.

¹³ In the very first report to the committee, for example, one school inspector complained that 'a power of reading the Bible mechanically may be imparted, but there is often a want of adequate skill and competent knowledge to convey a due comprehension of meaning of what is read'. *Report of the Committee of Council on Education (England and Wales), 1839-40* (London, 1840), p. 178, in *Proquest U.K. Parliamentary Papers* [accessed 20 December 2018]. Yet concerns about rote learning were not particular either to England or to the nineteenth century. Seventeenth- and eighteenth-century critics of rote learning include Thomas Hobbes, John Locke, John Amos Comenius, Jean-Jacques Rousseau, and Maria Edgeworth. See Elspeth Jajdelska, 'Income, Ideology and Childhood Reading in the Late Seventeenth and Early Eighteenth Centuries', *History of Education* 33.1 (2004), pp. 55-73; and Winter, pp. 228-29.

¹⁴ *Report of the Committee of Council on Education, 1847-48*, p. 17.

¹⁵ For examples, see *Report of the Committee of Council on Education, 1844-45*, pp. 249-51; *Report of 1849-50*, pp. 270-75; and *Report of 1857-58*, pp. 556, 804, and 814.

¹⁶ On the relationship between object lessons and the faculties, see Charles Mayo and Elizabeth Mayo, *Pestalozzi and his Principles*, 4th ed. (London: published for the Home and Colonial

incarnation, object lessons aimed entirely at developing students' faculties, starting with sense-perception and working up to judgment and reasoning. As the school inspector Joseph Fletcher described in 1845: 'the little one in the infant school is interested and delighted by the training of its faculties as they are successively developed, beginning with that of perception or observation [...] In the hands of a good teacher, the familiar objects and events around it are the most valuable instruments of instruction.'¹⁷ By 1857, another inspector reported that the 'teaching of "common things"' had 'of late obtained so firm a footing amongst English educationists', and explained that the practice 'connects the exercise of the understanding with familiar objects, and, in return, things the most simple become a source of inquiry and reflection'.¹⁸

In 1862, a revised curricular code streamlined the curriculum to focus on reading, writing and arithmetic, rather than on the power of observation. The system of grant-giving was also modified, so that funding was tied to the performance of each individual student on the day of inspection, and many educationists believed that the new system would lead to greater dependence on rote learning. James Kay-Shuttleworth, who served as Secretary of the Committee of Council on Education during its first decade, was a vocal opponent of the Revised Code of 1862, complaining that 'the Capitation Grant was so apportioned according to the results of [the school inspector's] examination as practically to discourage higher instruction' since 'the best means to attain this end were the concentration of the work of the school on a drill in these three rudiments'.¹⁹

Many school inspectors supported Kay-Shuttleworth's position. Inspector Joseph Bowstead suggested that 'the result [of the Revised Code] will be that these essential subjects will undoubtedly be taught more quickly and more effectually than heretofore; but there is the attendant danger that the teaching will be merely mechanical, and that in many schools no effort will be made to develop [sic.] the children's intelligence'.²⁰ Similarly, Inspector Joshua Girling Fitch wrote that he 'cannot resist the unwelcome conviction that the New Code

School Society 1890); Alexander Bain, *Education as a Science* (London: C. Kegan Paul & Co., 1879); and Adonijah Strong Welch, *The Teachers' Psychology: A Treatise on the Intellectual Faculties, the Order of Their Growth, and the Corresponding Series of Studies by Which They are Educated* (New York, NY: E.L. Kellogg & Co., 1889). On faculty psychology, see Vernon C. Hall, 'Educational Psychology from 1890 to 1920', in *Educational Psychology: A Century of Contributions*, ed. by Barry J. Zimmerman and Dale H. Schunk (Mahwah, NJ: Lawrence Erlbaum, 2003), pp. 10-13; Robert Hoeldtke, 'The History of Associationism and British Medical Psychology', *Medical History* 11.1 (January 1967), pp. 46-65; and Jenny Taylor and Sally Shuttleworth, *Embodied Selves: An Anthology of Psychological Texts, 1830-1890* (Oxford: Clarendon Press, 1998), pp. 67-69; and Helen Small, 'Subjectivity, psychology, and the imagination', in *The Cambridge History of Victorian Literature*, ed. by Kate Flint (Cambridge and New York, NY: Cambridge University Press, 2012), pp. 489-90.

¹⁷ *Report of the Committee of Council on Education, 1844-45*, p. 247.

¹⁸ *Report of the Committee of Council on Education, 1856-57*, pp. 556-557.

¹⁹ Kay-Shuttleworth, p. 12. See also Birch, pp. 26-27.

²⁰ *Report of the Committee of Council on Education, 1864-65*, p. 161.

is also tending to formalize the work of the elementary schools, and to render it in some degree lifeless, inelastic, and mechanical'.²¹ Of course object lessons could also be rendered lifeless and mechanical, as described by one inspector in 1863, who complained that 'it is no rare thing to see what are called "object-lessons" given to infants without any notice whatever being taken of the objects themselves, even when these are close at hand'. The result is that 'the poor bewildered infant [...] is effectually prevented from [learning] by the dry indigestible husks of classification with which the teacher tried to cram him'.²²

Successive iterations of the educational code attempted to alleviate the apparent problem of mechanical learning by emphasising the utility of illustration and observation. In 1871, the Education Department advised that 'new plans may be proposed, by which children may be enabled to gain scientific ideas from the study of natural objects and from careful direction of their power of observation'.²³ By 1877, these new plans began to take shape, with a revised code warning that 'if these subjects [science subjects and physical geography] are taught to children by definition and verbal description, instead of by making them exercise their own powers of observation, they will be worthless as means of education'.²⁴

The New Code of 1882 took this warning further by prescribing the use of object lessons as part of the optional class subject of elementary science. Borrowing from the language of object lessons to describe the requirements for elementary science, the code explained that the lessons should focus on 'familiar animals, plants, and substances employed in ordinary life' and must be 'adapted to cultivate habits of exact observation, statement, and reasoning'.²⁵ In 1895, further revisions to the educational code made object lessons compulsory for standards I through III, thereby making observation central to the curriculum. This change also made it necessary to provide further instructions as to appropriate delivery.²⁶ A circular addressed to Her Majesty's Inspectors on the topic of 'Object Teaching' provided such instruction, while also pointing out some of the ways that object lessons had gone wrong in the past, devolving, as the earlier inspector had put it, into 'dry indigestible husks of classification', or as the author of the circular suggested, into 'Information Lessons'.²⁷

The distinction between 'object lessons' and 'information lessons' provides a helpful starting point for thinking about the ways in which observation was deployed in Victorian schoolrooms. According to the circular's author, G. W. Kekewicil, the primary purpose of object teaching was 'the cultivation of the faculty of observation', which must be accomplished through 'observation of the

²¹ *Report of the Committee of Council on Education, 1864-65*, p. 171.

²² *Report of the Committee of Council on Education, 1862-63*, p. 89.

²³ *Report of the Committee of Council on Education, 1870-71*, p. cxxiv.

²⁴ *Report of the Committee of Council on Education, 1876-77*, p. 28.

²⁵ *Report of the Committee of Council on Education, 1881-82*, p. 134.

²⁶ *Report of the Committee of Council on Education, 1894-95*, pp. xi-xii and 315.

²⁷ 'Circular to H.M. Inspectors, Circular 369', in *Report of the Committee of Council on Education, 1894-95*, p. 530.

Object itself'. For Kekewicil, 'the imparting of information is secondary'.²⁸ Although not explicitly articulated by the circular, a significant difference between object lessons and so-called information lessons is the power that each one invests in the visual. Object teaching in its ideal form depends on vision and visuals as the primary component of the learning process. For Kekewicil, the object lesson becomes an information lesson when teachers diverge from this model, treating vision and visuals as useful accessories or even as unnecessary diversions.

The three approaches to visual pedagogy I have identified are not cohesive models for teaching and learning. Rather, they are possibilities within a spectrum of approaches to vision and visuals, ranging between: 1) a pedagogical approach that asserts the primacy and power of observation in the learning process; 2) an approach that employs vision and visuals as important accessories to learning; and 3) an approach that employs vision and visuals to secure student attention but does not make use of observation as an integral part of the learning process.

Metaperception

I have called the first of these three pedagogical approaches to vision and visuality 'metaperception', to indicate its emphasis on the act of perception itself, and on cultivating students' perceptual abilities; what is perceived is, at least in theory, inconsequential. This is the ideal model of object teaching described in the 1895 Circular on 'Object Teaching', where Kekewicil explains that the aim of such teaching is to 'cultivate the habit of obtaining knowledge directly and at firsthand' and to 'develop the faculty of observation'.²⁹

Some of the earliest and most popular books to promote this type of teaching were written by Elizabeth Mayo (1793-1865), a teacher and educational reformer based in London. Through her brother Charles Mayo, with whom she helped found the Home and Colonial School Society in 1836, Mayo was introduced to the ideas of the Swiss educator Johann Heinrich Pestalozzi (1746-1827). From 1819 to 1822, Charles lived with Pestalozzi at his school at Yverdon; upon his return to England, he brought with him the idea of the 'object lesson', which prompted students to learn from first-hand experiences with objects, with the purpose of developing the mental faculties.³⁰ The purpose was for students to exercise and improve their observational skills, thereby learning how to use their perception as a means of acquiring knowledge on their own.

In *Lessons on Objects*, first published in London in 1830 and reissued in subsequent editions throughout the century, Mayo begins by stating that 'the first step in the business of education' is 'to lead children to observe with attention the objects which surround them, and then to describe with accuracy the impressions

²⁸ 'Circular to H.M. Inspectors, Circular 369', p. 530.

²⁹ 'Circular to H.M. Inspectors, Circular 369', p. 530.

³⁰ Mayo, *Pestalozzi and his Principles*, p. 143; Carter, pp. 4-21 and 29-32.

they convey'.³¹ In another schoolbook, *Lessons on Shells*, Mayo outlined her methods and aims in more explicit terms, explaining that the purpose of the book was not to teach the 'science of conchology', but 'to develop children's powers of observation, comparison and classification; and to cultivate habits and tastes, which may in after life lead to a more correct and scientific study of the subject'.³²

While Mayo's first book of object lessons contained no images whatsoever, *Lessons on Shells* featured ten plates with engravings of shells (fig. 1). However, the pictures came with the warning that 'they are intended as an assistant to the teacher, but not as a substitute for the shells themselves in the instruction of pupils'.³³ Throughout her writings, Mayo is adamant that 'the object itself should be presented to the children; that their knowledge be acquired by themselves, instead of all being simply communicated by the teacher'.³⁴ The danger of 'simply communicating' information to pupils, for Mayo, was that 'though they may receive the information with pleasure, and appear to profit by it, yet under such a mode of instruction their minds remain passive, and they acquire a habit of receiving impressions from others, at a time when they ought to be gaining mental power by the exertion of their own faculties'.³⁵

Mayo's distrust of pictures needs to be understood in terms of how she and other educators of the time understood 'observation'. For Mayo and other promoters of object lessons, observation did not rely solely on vision, or on what could be communicated through visual representations. Observation was an embodied process that depended on all of the senses. For example, in the very first lesson in Mayo's *Lessons on Objects*, students are instructed to feel a piece of glass in order to determine that it is both smooth and hard; later, students learn that water is both tasteless and inodorous.³⁶ Furthermore, the final set of lessons in Mayo's book treat the senses themselves. As Mayo explains: 'The children having already been exercised in determining by which of the senses they discover the presence of any quality, may now be led to consider more fully the senses themselves.'³⁷ It is in these lessons, where students are asked to consider 'how you have gained the knowledge of various qualities', that students engage most explicitly in what I have called 'metaperception', or what we might call metacognition, defined by the *Oxford English Dictionary* as 'awareness and understanding of one's own thought processes'.³⁸ Metaperception, then, is a

³¹ Elizabeth Mayo, *Lessons on Objects*, 6th ed. (London: R. B. Seeley and W. Burnside, 1837), p. 1. The latest edition I have been able to locate is a 22nd edition published in London by Seeley and Burnside in 1876.

³² Elizabeth Mayo, *Lessons on Shells* (London: R. B. Seeley and W. Burnside, 1838), p. xi.

³³ Mayo, *Lessons on Shells*, p. xi.

³⁴ Mayo, *Lessons on Shells*, p. 53.

³⁵ Mayo, *Lessons on Objects*, pp. 3-4.

³⁶ Mayo, *Lessons on Objects*, pp. 6 and 13-14.

³⁷ Mayo, *Lessons on Objects*, p. 198.

³⁸ Mayo, *Lessons on Objects*, p. 198; and "Metacognition, n.," *OED Online* (Oxford University Press, 2019) <www.oed.com/view/Entry/245252> [accessed 9 April 2019].

means of cultivating such awareness with the goal of heightening one's ability to perceive, and to make meaning out of one's perceptions.

Mayo's account of student observation accords with previous scholarship on nineteenth-century visuality that proposes a paradigmatic shift towards a more subjective understanding of vision.³⁹ Mayo's observers are embodied, corporeal observers, and it is precisely because of this corporeality that these observers must be trained to master their perceptions. In particular, Mayo's suspicion of images supports Lorraine Daston and Peter Galison's argument regarding nineteenth-century objectivity.⁴⁰ Much like the nineteenth-century scientists described by Daston and Galison who adhered to a discourse of mechanical objectivity, Mayo insisted that objects of study should not be filtered through the subjective interpretation of an artist. Daston and Galison argue that a concern to eliminate the artist's subjectivity resulted in the methods of mechanical objectivity in scientific image making, and shifted the onus of interpretation from the artist to the viewer.

However, paying attention to the particularities of Mayo's methods undercuts any easy application of Daston and Galison's framework. Rather than being motivated by the threat of subjective image-making, Mayo's schoolbooks suggest that her primary concern was to cultivate the perceptive and interpretive capacities of viewers, and that shifting the onus of interpretation to the viewer came first. When it came to the study of shells, for example, Mayo insisted that students wade through a full sensory experience of shells themselves not because she was concerned about their interpretations getting muddled by the bodily perceptions of those who created the representations; after all, the pictures were appropriate for teachers. Rather, Mayo insisted on actual objects because the point was for students to learn how to sort through and master an onslaught of perceptions on their own. The popularity of the object lesson, and its underlying concern with cultivating the faculty of perception, thus provides an additional factor to consider in explaining the development of the discourse of mechanical objectivity, and introduces a more polydynamic discussion of nineteenth-century visuality.

Yet object lessons did not always unfold in the classroom in the ideal ways Mayo had in mind, as demonstrated by the 1895 Circular. Aside from disjunctions between theory and actual practice, as when teachers neglected the use of actual objects in their lessons, there are also contradictions within the theory of object lessons—even when they are carried out in an ideal way. For instance, there is a tension between Mayo's insistence on a student's free exploration of an object in the one-to-one relationship between student and object, and her equally adamant insistence on the correct interpretation of the objects. By the third page of *Lessons on Shells*, students are already learning that 'when we are struck with the beauty and utility of any of God's works, we not merely admire the thing, but praise God

³⁹ For an overview of this scholarship, see Potter, p. 2 and Willis, pp. 1-5.

⁴⁰ Lorraine Daston and Peter Galison, *Objectivity* (New York, NY: Zone Books, 2007), pp. 115-90.

for his wisdom, and thank him for his goodness'.⁴¹ This emphasis on a theological interpretation of the natural world continues throughout the volume, showing that what students were supposed to learn did not always inhere in the object itself, and could not be gleaned solely through observation, even when all of the senses were involved.

This mingling of the visible and invisible is also apparent in *Lessons on Objects*, where students are led through encounters with both raw materials and manufactured objects, and with both local English resources and resources imported from colonies. The lesson on brown sugar, for example, introduces students to the terms 'foreign' and 'imported', which are both included in the list of qualities to be observed, alongside perceptible qualities such as brown, granulous, sweet, soluble, opaque, and sticky.⁴² Following this list of qualities, teachers are informed that brown sugar is 'obtained from the Sugar Cane, which is cultivated in the East and West Indies'.⁴³ Yet the bodies of the people who labour in the sugar fields go entirely unremarked. They are thereby removed from both the teacher's and the students' fields of vision, and thus rendered unknowable within the confines of the English schoolroom. In contrast, Ruskin's object lesson from *The Stones of Venice* sought to make labour visible, suggesting that slave labour could be made discernible by close looking.

These examples show that though metaperceptual approaches to teaching and learning emphasized each student's individual bodily perceptions, there was an equal emphasis on aspects, which were imperceptible to the senses. Ruskin's and Mayo's object lessons show us that perception alone was often inadequate for teaching students how to interpret their perceptions—how to move from a point of looking to a position of learning and knowing. With this in mind, the difference between 'object lessons' and 'information lessons' becomes increasingly difficult to discern.

Sustained Perception

This next approach to teaching and learning with visual materials muddies the line between 'object lessons' and 'information lessons' even further by emphasizing the information to be learned through object lessons or, more commonly, through picture lessons. In this model, visuals help secure and sustain the attention of students, and though such visuals play a role in training students' perceptive abilities, the final goal is to deliver information.

An American edition of Mayo's *Lessons on Objects* from 1835, titled *Lessons on Common Things*, provides an early example of this supposed adulteration of the object lesson. Though the editor, John Frost, reprinted Mayo's introductory remarks emphasizing the importance of developing the perceptive faculties, his version includes fifty-two wood engravings. Additionally, the stated

⁴¹ Mayo, *Lessons on Shells*, p. 3.

⁴² Mayo, *Lessons on Objects*, p. 50.

⁴³ Mayo, *Lessons on Objects*, p. 51.

purpose of the book is to help ‘the pupil acquir[e] more definite ideas of the meaning of words, and the exact properties and qualities they indicate’.⁴⁴ The emphasis, then, is on developing knowledge through perception, rather than developing perception per se, and objects, pictures of objects, and texts can all contribute to this process. The ‘Object Teaching’ Circular from 1895 also promotes this approach by emphasizing the role that ‘diagrams, pictures, models, or lantern slides’ could play in illustrating lessons. The actual objects that were so important to Mayo, along with the training of senses other than sight, tend to fall by the wayside, so long as ‘suitable appeal was made to the eye of the scholar’.⁴⁵

These shifting priorities correspond to contemporary discourses within the emerging field of educational psychology. Over the course of the nineteenth century, faculty psychology lost much of its authority and began to appear outdated to a new crop of experimental psychologists. The psychologist William James, addressing teachers in 1899, wrote that ‘the popular idea that... a general elementary faculty, can be improved by training, is a great mistake’.⁴⁶ Earlier, the educational psychologist James Sully explained that ‘the hypothesis of faculties’ leads to ‘the false supposition that mental activity [...] is a juxtaposition of totally distinct activities answering to a bundle of detached powers’.⁴⁷ Replacing the model of disparate faculties within the mind was a model that paid greater attention to external stimuli. Rather than treating sensory perception as a muscle that could be exercised and strengthened in isolation, sensory perception increasingly came to be understood as dependent on the materials to be perceived, and their ability to gain the interest of students.

Along with this understanding came an insistence on the value of visual materials to secure student interest and promote learning. In 1879, the Scottish psychologist Alexander Bain explained that ‘pictures, images, or descriptions’ make the strongest impression.⁴⁸ In his *Teacher’s Handbook of Psychology* of 1886, Sully wrote that ‘the permanence of an impression depends on the degree of interest excited by the object’, and that since ‘we appear to recall sights best of all’, ‘our knowledge of things is largely made up of visual pictures’.⁴⁹ These quotations show that visual materials were understood as important teaching aids due to their ability to secure student attention. The ultimate purpose of these visual materials was not to cultivate the senses, as it was with metaperception,

⁴⁴ *Lessons on Common Things*, ed. by J. Frost (Philadelphia, MA: Thomas T. Ash, 1835), p. 2. A second edition of Frost’s version of the text was published in Philadelphia by J.B. Lippincott & Co. in 1857.

⁴⁵ ‘Circular to H.M. Inspectors, Circular 369’, p. 530.

⁴⁶ William James, *Talks to Teachers on Psychology: and to students on some of life’s ideals* (New York, NY: Henry Holt and Company, 1899), 129-130.

⁴⁷ James Sully, *Outlines of Psychology with Special Reference to the Theory of Education* (London: Longmans, Green & Co., 1885), p. 37.

⁴⁸ Bain, pp. 179 and 216.

⁴⁹ James Sully, *The Teacher’s Handbook of Psychology* (London: Longmans, Green, & Co., 1886), pp. 163 and 184.

but to secure a sustained attention in order to acquire knowledge about a particular topic. For teachers working to improve a student's ability to perceive in a sustained way, object lessons were also valued, but their purpose is somewhat transformed, leading Bain to complain that using the term 'object lesson' can be misleading.⁵⁰

The contradictory ways that object lessons were enacted can already be seen in the methods advocated by Mayo, where much of the lessons depended on an ideological interpretation that is imperceptible. These contradictions grew increasingly insistent once object lessons were adopted by the New Code of 1882, when these lessons were increasingly standardized in schoolbooks and manuals offering aids to teachers. Such materials, frequently adopting the term 'object lesson' and assuring teachers that the lessons correspond to the updated curricular code, include visual materials in various ways.⁵¹ Oliver and Boyd's *Object-Lesson Cards*, for example, consisted of three series, treating the Vegetable Kingdom, Animal Kingdom and Mineral Kingdom, respectively. Approximately one-third of each card is filled with visual and tactile materials, including wood-engraved images, raw materials and finished products, while the remaining two-thirds of each card is filled with informational text. The card on 'The Sheep', for instance, featured an engraving of three sheep in a rugged landscape. Surrounding the picture to the right and left are specimens of wool, thread, cloth, paper, roan (a type of leather), and catgut (used as strings in musical instruments), which are all products derived from sheep [Figure 2]. These tactile objects are attached to the card, offering students an opportunity to engage first-hand with the material itself. This combination of actual specimens with images and text may have been unique, since not many of examples of this kind survive in collections—although it is just as likely that the tactile nature of the specimens hastened the cards' destruction thus contributing to their seeming rarity. Either way, the cards help dramatize the tension between object lessons and information lessons, offering a physical embodiment of the way in which visual specimens were framed by information, and were often inextricable from that information.

Most of the educational materials that survive in library collections take the form of schoolbooks, and rely on two-dimensional, exclusively visual representations. Still, there was a tendency to combine different types of representations in order to offer different perspectives on the objects of study. *Blackie's Object-Lesson and Science Readers* included different types of pictures, some of which showed the objects of study in narrative pictures, others isolating the objects as specimens. In a lesson on 'The Horse', for example, a line drawing of a horse's skull faces a page featuring a lively image of a 'Herd of Wild Horses' [Figure 3]. The illustration of the 'Skull of a Horse' is scientific in tone

⁵⁰ Bain, p. 134.

⁵¹ For examples, see *Blackie's Object-Lesson and Science Readers, No. I and II* (London: Blackie & Son, 1893); *The Graphic Object Reader* (London and Glasgow: William Collins, Sons & Co., 1898); *Object Lessons in Elementary Science* (London: Macmillan, 1894); and *The Avon Object Lesson Handbook* (London: Sir Isaac Pitman & Sons, 1897).

with numbers labelling features of the skull that identify ‘cutting teeth’ and ‘grinding teeth’.⁵² In contrast, the picture of wild horses is replete with shading and texture to indicate movement and variety. The horses’ bodies are placed at conflicting angles and overlap one another, while the tightly framed composition and faded edges of the vignette suggest that we are witnessing a small part of a larger scene. Here, it is the chaos and frenzy communicated by the image’s narrative that illustrates the lesson, rather than the clearly labelled component parts of a specimen drawing. In addition, the artist’s initials can be seen in the bottom left-hand corner of ‘Herd of Wild Horses’, suggesting the importance of the hand of an artist in creating the representation, while no such signature appears alongside the ‘Skull of a Horse’.⁵³

A similar variety of illustrations are present side-by-side in *The Graphic Object Reader*, published by William Collins, Sons & Co. in London and Glasgow in 1898. The lesson on the horse features a picture of a horse with its foal set within an appropriately pastoral landscape [Figure 4]. The picture is most likely rendered with chromolithography, which was common by the end of the century, and the vibrant greens, muddy browns and blue sky help animate the picture so that it appears not just as a specimen of a horse and its foal, but also as a narrative picture set within the English countryside. Any number of lessons could be drawn out of this picture, from a discussion of the visible features of the horse, to a lesson on the horse and its environment, or even a consideration of the relationship between horse and foal, especially when paired with the similar picture of a donkey and its foal just beneath. The following pages feature pictures in black and white that focus more on the specific information to be communicated to students [Figure 5]. On the left-hand side is a picture of a horseshoe that takes on the appearance of an isolated specimen, much like the decontextualized horse’s skull featured in *Blackie’s Object-Lesson and Science Readers*. The facing page provides an example of a blackboard drawing that could be copied by the teacher or student. The drawing of the horse, with its emphasis on simplified lines that could be easily reproduced, eliminates superfluous information that might lead the lesson in various directions, and thus helps to also simplify and streamline the lesson.

The two books discussed here, with their varied examples and wealth of imagery, are typical of over 40 schoolbooks published between 1882 and 1905 currently in the collections of the British School Museum in Hitchin and the British Library in London. The variety of pictures found within such schoolbooks appear to celebrate the possibilities for illustration and the potential of up-to-date technologies to deliver powerful visuals to students. The primary purpose is not to train the senses or demonstrate the power of observation; notably, the only sense involved is that of sight. Rather, these materials deliver information effectively and comprehensively, and also show how different media could be used to advantage. Furthermore, characteristics of objects that remain

⁵² *Blackie’s Object-Lesson*, p. 24.

⁵³ *Blackie’s Object-Lesson*, p. 25.

imperceptible in Mayo's and Ruskin's object lessons, such as the type of labour required to produce an object, are potentially rendered legible through the texts that frame each illustration.

Spontaneous Perception

Early psychologists attempted to explain the practice of attention by distinguishing between voluntary and non-voluntary attention. In his *Teacher's Handbook of Psychology*, Sully described voluntary attention as 'an act of will', in which 'we attend to a thing under the impulse of a desire, such as curiosity or a wish to know about a thing'.⁵⁴ In contrast, with non-voluntary attention, also known as reflex attention or spontaneous attention, 'the direction of the attention is determined for the mind, rather than by the mind'.⁵⁵ Sully goes on to describe how novelties and sudden changes attract this type of attention, since they stand out from 'our ordinary surroundings and experience'.⁵⁶ The schoolbooks discussed thus far seek to reduce the influence of non-voluntary attention by disciplining the senses through the cultivation of metaperception and through the use of rich visual materials that can sustain a student's interest. In contrast, the visual pedagogies promoted by some nineteenth-century educators sought to address undisciplined observers in ways that relied on spontaneous attention.

The difficulty of securing the attention of children in particular was often acknowledged; Bain explained that concentration in very young children 'lasts so long as enjoyment lasts and no longer', while the educationist and school inspector Joshua Girling Fitch, in a published lecture on 'The Art of Securing Attention in a Sunday School Class' asked his readers to 'first of all acknowledge to ourselves, that attention, such as we want to get from children, is a very hard thing to give'.⁵⁷ Fitch explained that students 'should feel that the subject claims attention for itself, not that you are claiming attention *for* the subject'.⁵⁸ But when it came to Sunday School teaching and 'the great truths of revealed religion', Fitch recognised that 'there is rarely any strong curiosity in a child's mind' and therefore 'you have to create it'.⁵⁹ He went on to offer strategies to help teachers claim student attention, and advocated especially for 'using good and striking illustrations' in order to 'appear to a child's imagination as if they were really present to him'.⁶⁰ In other words, visual materials can be used to capture the attention of children whose attentive capacities remain undisciplined. The lesson

⁵⁴ Sully, *The Teacher's Handbook of Psychology*, p. 86.

⁵⁵ Sully, *The Teacher's Handbook of Psychology*, p. 86.

⁵⁶ Sully, *The Teacher's Handbook of Psychology*, pp. 86-7.

⁵⁷ Bain, p. 179; Joshua Girling Fitch, *Fitch's Lectures to Sunday School Teachers* (London: Sunday School Union, 1869), p. 35. Fitch's lectures were published in both London and New York, with later versions addressing teaching more generally, without reference to Sunday School.

⁵⁸ Fitch, p. 39.

⁵⁹ Fitch, p. 37.

⁶⁰ Fitch, p. 50.

is clearly about information, delivered through novel visuals, rather than about vision or observation.

One educator who adopted a method of courting spontaneous perception through visual novelty was the American pastor Wilbur Fisk Crafts (1850-1922). Though much of my research focuses on the British context, this American example is worth examining due to its explicit dependence on spontaneous perception, a method that was usually not explicitly applauded. In a book of religious instruction published in 1873, entitled *Through the Eye to the Heart: Eye-Teaching in the Sunday-School*, Crafts explained that ‘one marked characteristic of this age is an inclination to put things into the mind by a quick concentration on the eye’.⁶¹ By way of example he lists:

the increased amount of blackboard work in our day-school, to the large number of magazines and papers that have recently introduced illustrations into their heretofore unillustrated pages, to the inscriptions on rocks and fences, the great number of picture advertisements in our papers, and the increasing custom of illustrating lectures.⁶²

Crafts proposed that all of these visual effects were intended to ‘catch the public eye’ and explains that the Sunday School teacher must adopt similarly eye-catching methods in order to instruct students successfully.⁶³ He suggests the use of a ‘Picture Scrap-Book’, which, according to one teacher, guarantees ‘no trouble “to get the attention” of my scholars’.⁶⁴

A second strategy is to use a blackboard in order ‘to collect attention’.⁶⁵ As Crafts explains: ‘When a pastor or superintendent lifts the chalk to the blackboard interest is awakened, attention is secured, and the mind is exercised in curiosity as to what is coming next, and what is to be the meaning of the completed work.’⁶⁶ Here, attention to the object to be perceived is directed from without by novelty and change in the environment. Most of the examples of blackboard illustrations included within the book are not pictures at all, but words arranged in novel ways [Figure 6]. As explained in the text: ‘Various degrees of emphasis are indicated by the *size* and *position* of words. A word in large capitals or a word having a whole line is made especially emphatic.’⁶⁷ Elsewhere, Crafts explains how to make ‘showy letters... in all sorts of irregular shapes’.⁶⁸ The illustrations

⁶¹ Wilbur Fisk Crafts, *Through the Eye to the Heart: Eye-Teaching in the Sunday-School* (New York, NY: Nelson & Phillips, 1873), p. 20. Craft’s volume was also published in England as *Through the Eye to the Hart; or, Plain Uses of the Blackboard, and other Visible and Verbal Illustrations in the Sunday School and Home* (London: Hodder and Stoughton, 1880).

⁶² Crafts, pp. 19-20.

⁶³ Crafts, p. 57.

⁶⁴ Crafts, p. 50.

⁶⁵ Crafts, p. 57.

⁶⁶ Crafts, p. 58.

⁶⁷ Crafts, p. 64.

⁶⁸ Crafts, p. 73.

themselves therefore reinforce the notion that their purpose is to attract attention rather than to develop understanding.

Educators like Fitch and Crafts certainly hoped to hold their students' attention, in addition to attracting it, and to move from non-voluntary attention, based on a reflexive response, to a voluntary and sustained attention that would enable student learning. To depend solely on the spark of interest brought about by non-voluntary attention would amount to a reliance on a seemingly mechanical response, and would suggest that spontaneous perception stood as an adequate means of learning about the world. Such an approach also involved relying on visuals only tangentially, as a means of getting attention in order to deliver information, and this was the kind of teaching that prompted the Education Department and its school inspectors to warn teachers about the appropriate use of object lessons in the 'Object Teaching' circular of 1895. As dominant practices observed by school inspectors edged towards spontaneous perception, it became necessary to clarify and codify appropriate uses of object lessons, and to warn teachers that 'it should be always remembered that in Object Lessons the imparting of information is secondary to the cultivation of the faculty of observation'.⁶⁹

Here we have come full circle, since it is partly the threat of spontaneous perception, and its associations with mechanism and rote learning, that reinforced the need for object lessons that could cultivate metaperception or sustained perception. This observation also brings us back to Ruskin's critique of observational practices. Spontaneous perception is precisely the type of undisciplined looking that Ruskin critiqued in his lectures on engraving published in 1873, where he complained of a 'bestial English mob' growing increasingly 'incapable of reading, of hearing, of thinking, of looking', and capable only 'of momentary curiosity'.⁷⁰

Just beyond the section where Ruskin complains about the mob produced by the 'illustrative art industry of the modern press', he explains that 'to the general people, trained in the midst of the ugliest objects that vice can design, in houses, mills, and machinery, *all* beautiful form and colour is as invisible as the seventh heaven'.⁷¹ Here, Ruskin makes it clear that the capacity to appreciate beauty—to look 'rightly' and aesthetically—is not merely a question of taste, but one of perception. As he explains: 'It is not a question of appreciation at all; the thing is physically invisible to them, as human speech is inaudible during a steam whistle.'⁷² The last part of the sentence is significant, where it is the steam whistle—a loud noise resulting from a modern technology—that renders human speech inaudible. The analogy can be carried further. Just like the steam whistle overtakes human speech (possibly even civil discourse entirely in Ruskin's

⁶⁹ 'Circular to H.M. Inspectors, Circular 369', p. 530.

⁷⁰ John Ruskin, *Ariadne Florentina: Six Lectures on Wood and Metal Engraving* (London: George Allen, 1904), p. 267.

⁷¹ Ruskin, *Ariadne Florentina*, pp. 267 and 273.

⁷² Ruskin, *Ariadne Florentina*, p. 273.

estimation), a plethora of ugly visual materials, much of them printed *en masse* with the steam-driven printing press, crowds out beautiful form and colour.

The ‘ugly objects’ that Ruskin had in mind, produced by the ‘illustrative art industry of the modern press’, are exactly the same types of materials described by Crafts that were intended to ‘catch the public eye’: illustrations in magazines and papers, picture advertisements, and illustrated lectures. While Crafts proposed to compete for student attention by introducing similarly eye-catching methods into the classroom, Ruskin and many of the other educators discussed here proposed the methods of the object lesson as an antidote to spontaneous perception, and as a means of cultivating a more deliberate and thoughtful mode of looking. For Ruskin and other educators, what the so-called bestial mob was lacking were object lessons, rather than mere ‘information lessons’—though, as we’ve seen, the line between these was always difficult to discern.

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Figures

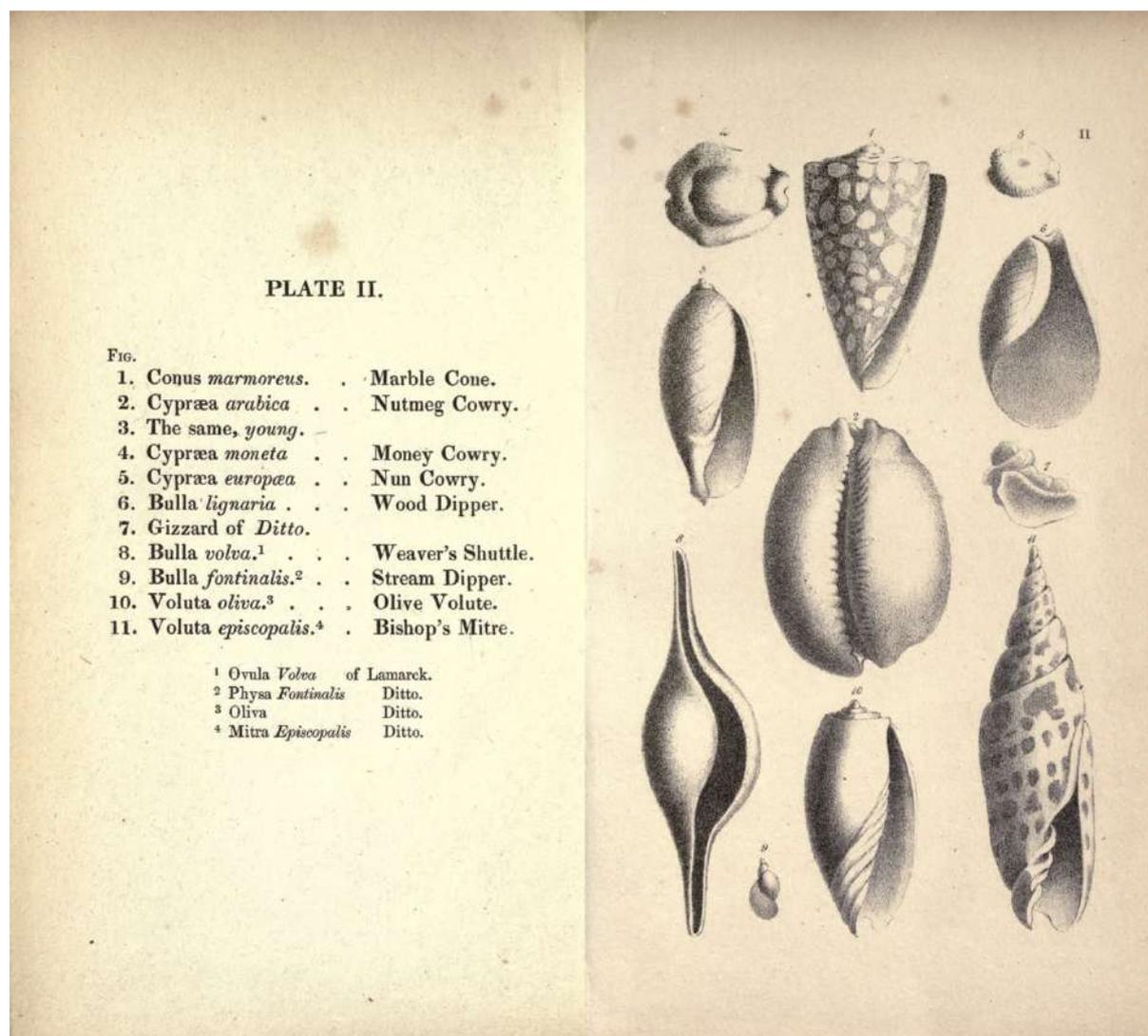


Fig. 1. Plate 2 of Elizabeth Mayo's *Lessons on Shells*, 2nd edition (London, 1838). Image courtesy of University of California Libraries.

<<https://archive.org/details/shellsalessonson00mayorich/page/n4.>>

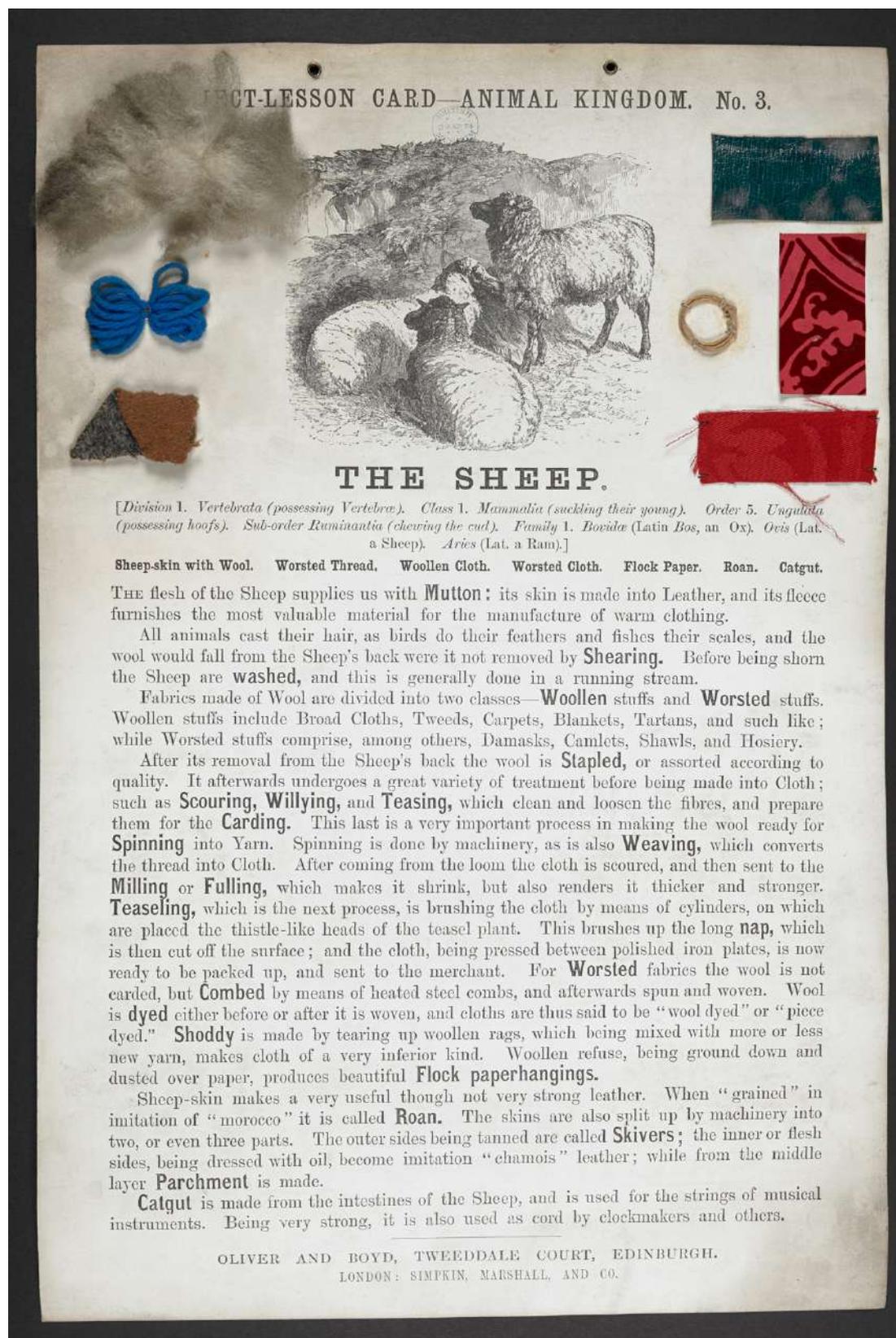


Fig. 2. "The Sheep," *Oliver and Boyd's Object-Lesson Cards* (Edinburgh: Oliver and Boyd, 1874-78). Image courtesy of the British Library. (c) British Library Board: N.Tab.2016/4.

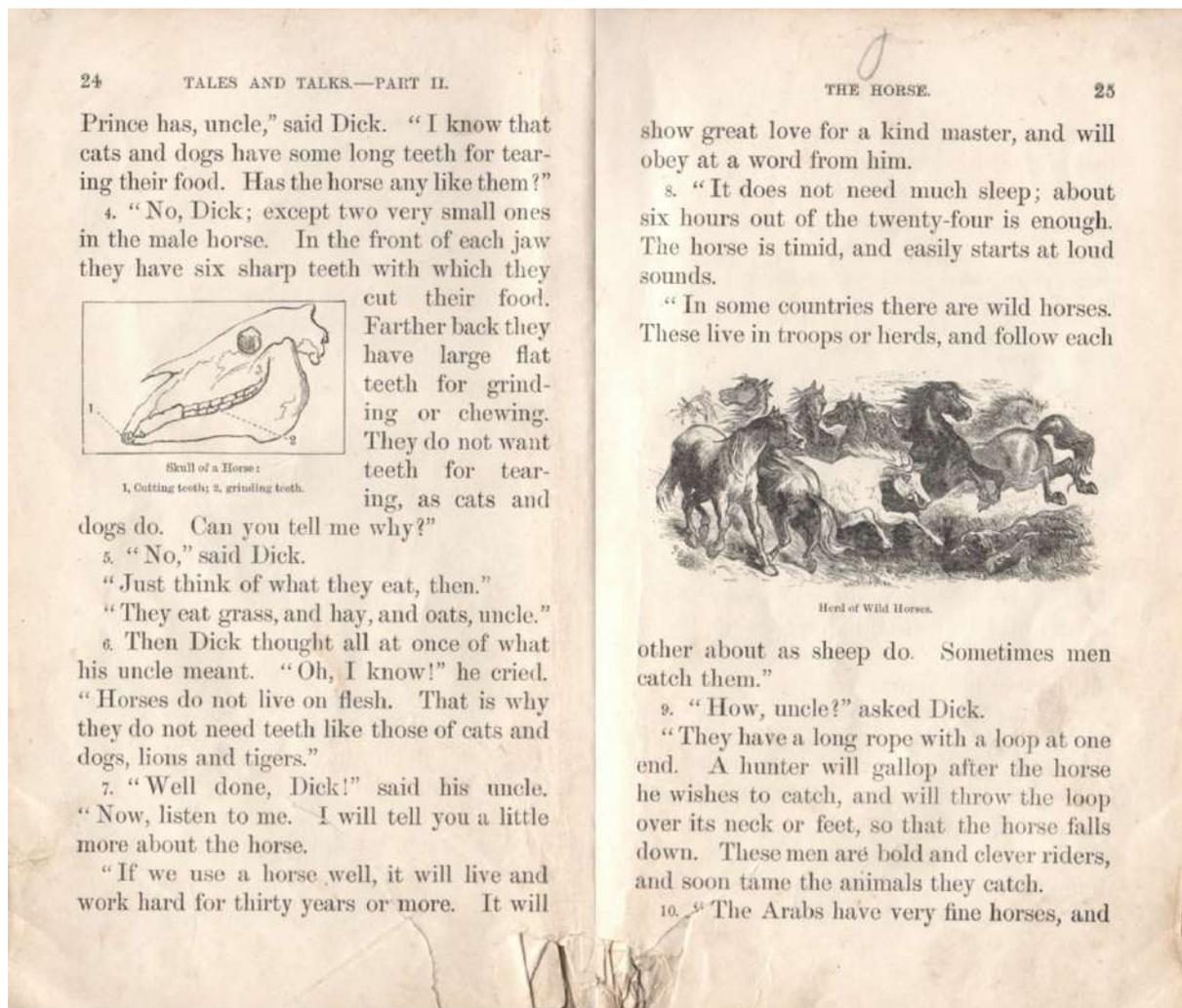


Fig. 3. "Skull of a Horse" and "Herd of Wild Horses," in *Blackie's Object-Lesson and Science Readers, Pt. II: Tales and Talks on Common Things* (London: Blackie & Son, 1893). Image courtesy of the British Schools Museum, Hitchin, UK, Object No. JGB416.

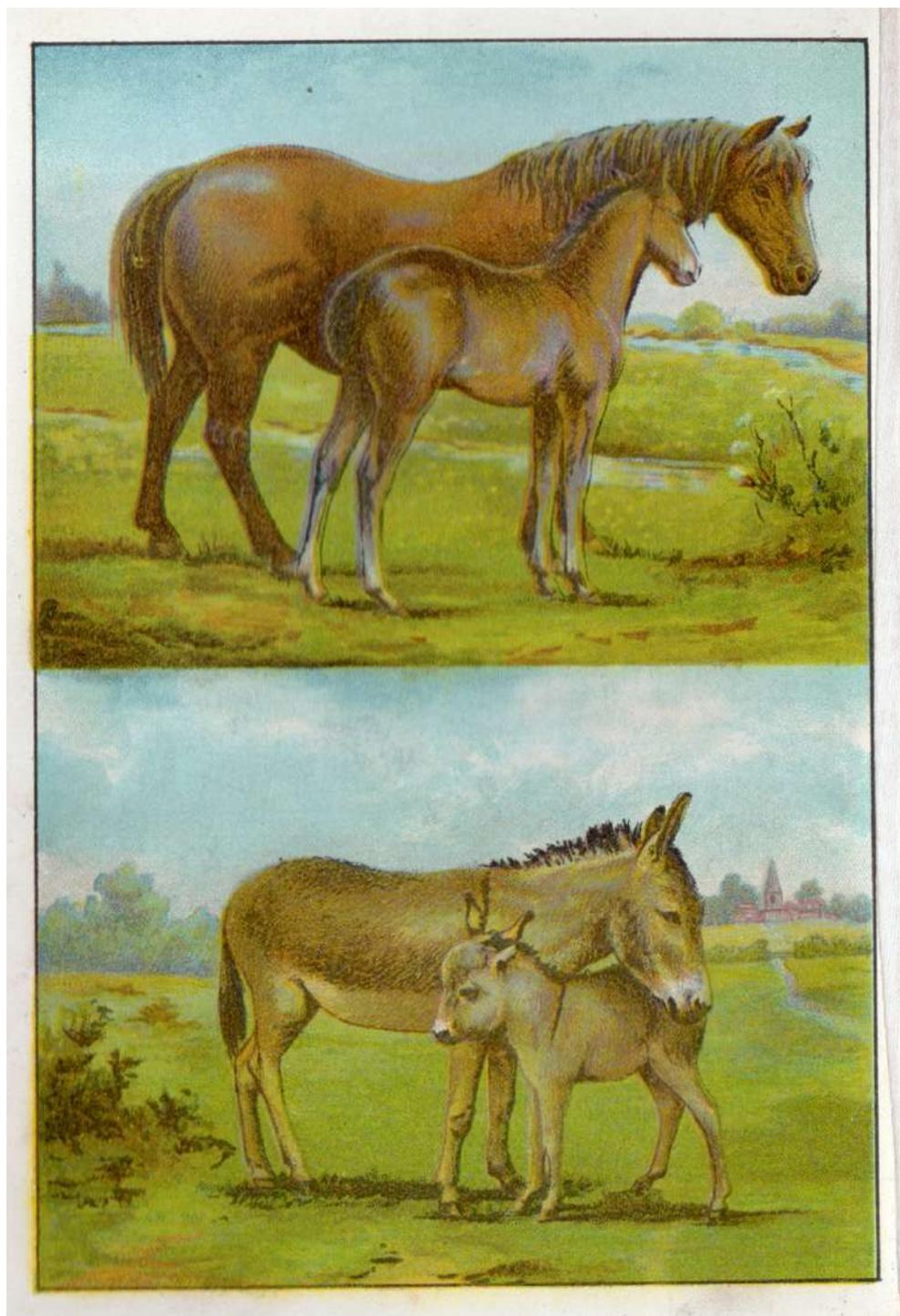


Fig. 4. From the Lesson on “The Horse,” in *The Graphic Object Reader* (London and Glasgow: William Collins, Sons & Co., 1898). Image courtesy of the British Schools Museum, Hitchin, UK, Object No. JGB53.

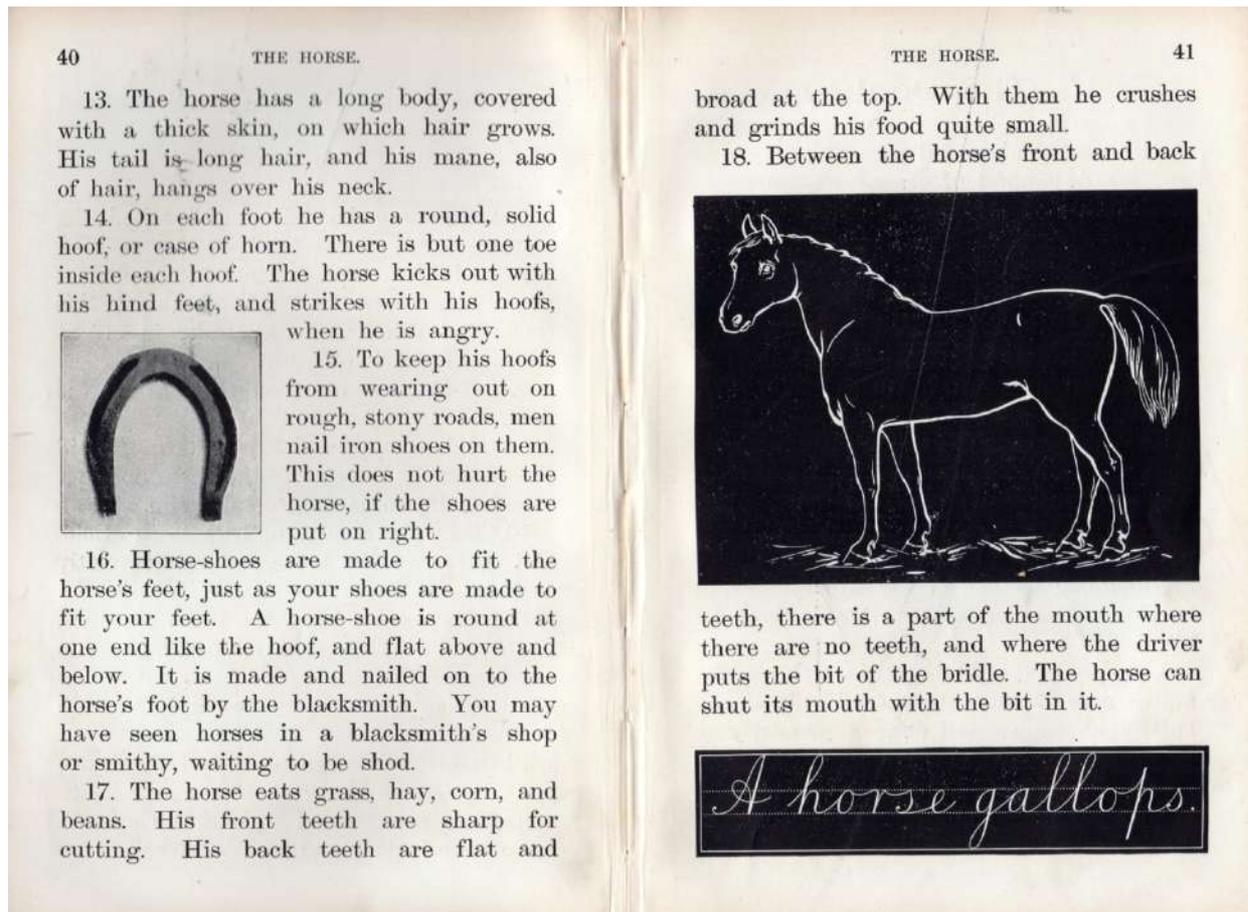


Fig. 5. From the Lesson on "The Horse," in *The Graphic Object Reader* (London and Glasgow: William Collins, Sons & Co., 1898). Image courtesy of the British Schools Museum, Hitchin, UK, Object No. JGB53.

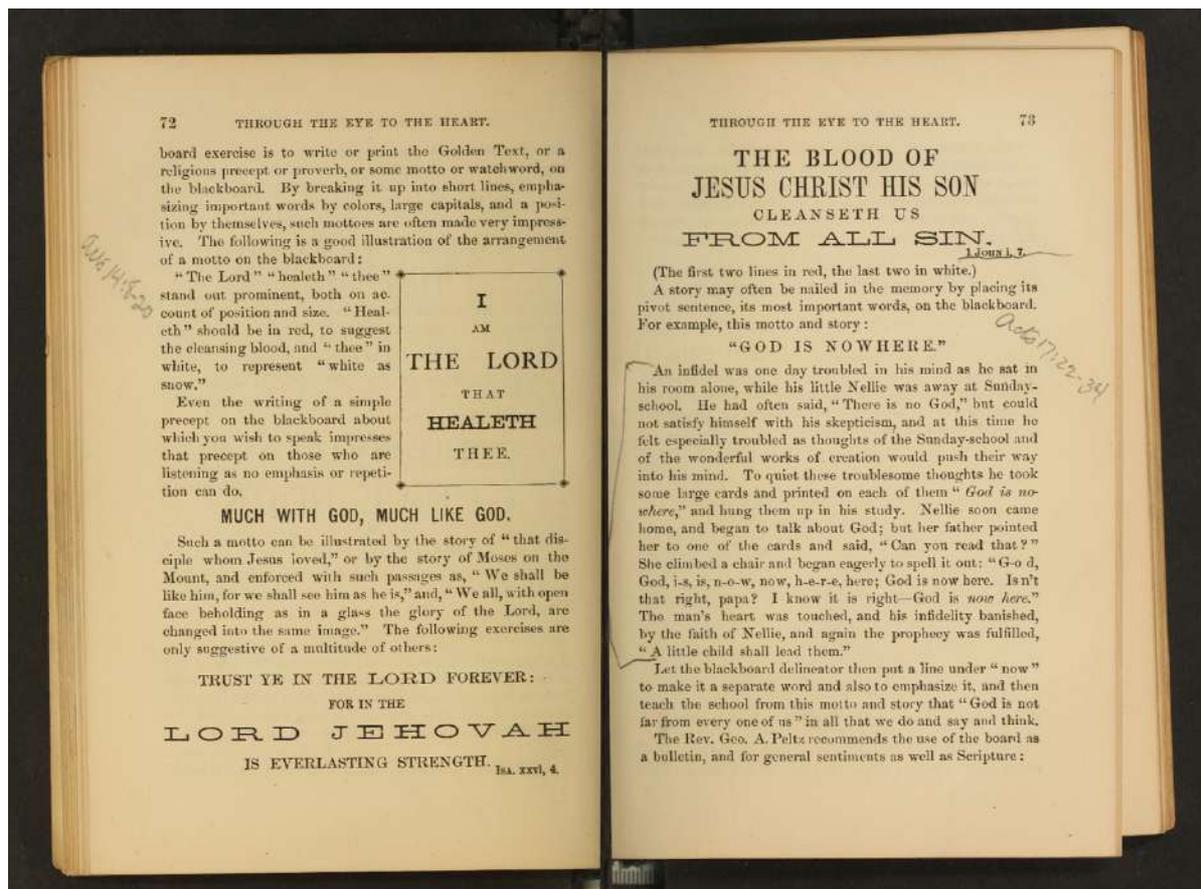


Fig. 6. From Wilbur Fisk Crafts's *Through the Eye to the Heart: Eye-Teaching in the Sunday-School* (New York NY: Nelson & Phillips, 1873). Image courtesy of the Library of Congress, <https://archive.org/details/througheyetohear00craf/page/72>.