

## Pope and the 'Microscopic Eye'

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Why has not man a microscopic eye?  
For this plain reason, man is not a fly.<sup>1</sup>

When, in 1733, Alexander Pope published this couplet in his *Essay on Man*, the answer to his rhetorical question, based as it is on a particular philosophical and moral world-view, seemed self-evident. The verse-paragraph of which this couplet forms a part asserts a belief in 'the eternal fitness of things' and such an answer would therefore be axiomatic; but, in taking the stance that he does, Pope is being both illogical and reactionary. Since the middle of the seventeenth century European science had possessed the microscope itself and a knowledge of the microscopic world.<sup>2</sup> Enlightened Englishmen in general had possessed both since 1665, when secretary Robert Hooke published his handsomely illustrated *Micrographia* for the Royal Society.<sup>3</sup> The microscopical demonstrations which Hooke prepared for the Society on a regular basis, his detailed descriptions and speculations, the meticulous drawings which he caused to be made for *Micrographia*, were of great importance in advancing the cause of English science. As the historian R. T. Gunther wrote in his *Early Science in Oxford* (Vol. XIII):

To Robert Hooke alone must be ascribed the honour of having caused the great capability of the microscope to be realised in England, and that within a few months of the exhibition of his new model microscope at a meeting of the Royal Society. To this end Hooke worked hard in spare hours snatched from the routine of his busy life as Curator of Experiments for the Royal Society . . . The book is a fundamental classical work in the development of several Sciences and presents many ingenious ideas.

Hooke conducted his demonstrations to the Society between April and December 1663. Most of them were subsequently written

- 1 *Essay on Man* I, ll. 193-4. All Pope quotations, unless otherwise noted, are taken from *Collected Poems*, ed. Bonamy Dobree (Dent, 1924).
- 2 For the general historical background to the subject I am indebted, as all students must be, to Marjorie Hope Nicolson's ground-breaking *The Microscope and the English Imagination* (Northampton, Mass., n.d. ?1935).
- 3 *Micrographia: or Some Physiological Descriptions of Minute Bodies* (London, 1665). Facsimile edition published by Dover Books (New York, 1961). All quotations from the work have had their spelling and punctuation modernized. Page references are incorporated in the text.

up and illustrated in *Micrographia*, among them the following:

- April 8. Common Moss
- April 22. Leeches in vinegar. Blue mould on leather.
- April 29. Spider with six eyes.
- May 20. Head of ant. Fly like a gnat. Point of a needle.
- July 8. Millipede.
- September 9. Parts of a fly.
- October 7. Common fly. Moss with the seed.

Many of these demonstrations, as well as others that Hooke so painstakingly described, were to become the butt of literary satirists for generations after. The 'insect' imagery so often noted in Pope's poetry, though it often has a literary background, would have gained added impetus from his well documented love of illustrated books.

Concurrent with the publication of *Micrographia* came the popularization of the microscope as the latest social novelty. As with the telescope of a generation or so earlier, the main difficulty of making precision instruments which could be used by the amateur had lain in producing lenses of high quality resolution. Improvements in glass-making and polishing techniques, coupled with the small size of the instrument (astronomical telescopes could range up to fifty feet in length) soon made the microscope seem a necessity in many a gentleman's study. The young Samuel Pepys, later to become president of the Royal Society himself, bought a copy of Hooke's book almost as soon as it was published:

Thence to my booksellers, and at his binders saw Hooke's book of the Microscope which is so pretty that I presently bespoke it, and away home.  
(*Diary*, 2 January 1665)

To my bookseller's, and there took home Hooke's book of Microscopy, a most excellent piece, and of which I am very proud. (*Diary*, 20 January 1665)

Pepys already owned a microscope which he had bought the year before (*Diary*, 13 August 1664) which had cost him five pounds ten shillings. The next night he and his wife began to make observations 'with great pleasure but with great difficulty, before we could come to find the manner of seeing anything'.

As a vehicle for satire of the virtuosi and as an available metaphor, the microscope had already entered English literature. Samuel Butler had made play with it in *Hudibras* (1664), Marvell refers to 'multiplying glasses' and fleas in *Appleton House*, and Ned Ward was to characterize Gresham College, the home of the Royal society, as 'Maggot-mongers' Hall' in his *London Spy* (1698).

Of all the literary satires contemporary with *Micrographia*, the most extended and pointed was Thomas Shadwell's play *The Virtuoso* (1676), in which the protagonist Sir Nicholas Gimcrack carries out almost all the observations and demonstrations described in Hooke's work. *The Virtuoso* became a handy source and quick reference for the material with which to satirize scientific enquiry that is characteristic of much of the writing of the Augustan age.

'Serious' popularization of the revelations and potential of the microscope was greatly assisted by the publication (Paris, 1686) of Bernard de Fontenelle's *Entretiens sur la Pluralité des Mondes*. This work was almost immediately translated into English by Mrs Aphra Behn (1688), while another translation by John Glanvill appeared the same year. Both these translations went through numerous editions in the next thirty years or so, while yet another English translation, by W. Gardiner, appeared in 1719 as *Conversations on the Plurality of Worlds*. Fontenelle's work, both elegant in style and intelligent in matter, was decidedly on the side of the 'Moderns' in the long-running war between 'Ancients' and 'Moderns'; some later editions of Gardiner's translation included as part of the text Joseph Addison's *Oration made at Oxford, in Defence of the New Philosophy*.

Both the *Tatler* and *Spectator*, in the early years of the new century, introduced an even wider audience to the revelations of the microscope. Their frequent references to it, both satiric and serious, suggest that its use was commonplace, even if mostly as an amusing toy. Since the days of Samuel Pepys microscopes had become even cheaper, and even more indispensable. As early as 1710, Jonathan Swift thought for a while of buying one for Stella, as his journal records:

I called at Ludgate for Dingley's glasses, and shall have them in a day or two; and I doubt it will cost me thirty shillings for a microscope, but not without Stella's permission; for I remember she is a *virtuoso*. Shall I buy it or no? 'Tis not the great bulky ones, nor the common little ones, to impale a louse (saving your presence) upon a needle's point; but of a more exact sort, and clearer to the sight, with all its equipage in a little trunk that you may carry in your pocket. (*Journal to Stella*, 15 November 1710)

In view of the *Journal's* many references to Stella's poor eyesight, Swift may have merely been teasing; at any rate, by 22 December he had apparently decided against getting one:

I forgot to tell you, madam Dingley, that I paid nine shilling for your glass and spectacles, of which three were for the bishop's case: I am sorry I did not buy

you such another case; but if you like it, I will bring one over with me, pray tell me: the glass to read was four shillings, the spectacles two . . . I paid the glass-man last night, and he would have made me a present of the microscope, worth thirty shillings, and would have sent it home with me; I thought the deuce was in the man: he said I could do him more service than that was worth, &c. I refused his present, but promised him all service I could do him.

Alexander Pope's acquaintance with the microscope and the telescope has been surveyed by Marjorie Nicolson and George Rousseau in *This Long Disease, My Life*,<sup>4</sup> a 'biography' of Pope in the context of the science of his day. Much of the book is taken up with a consideration of Pope's health and its relationship to contemporary medical science. In the long section following, on astronomy and the telescope, Nicolson, who was the main contributor there, concentrates her attention mostly on the philosophy and morality of the *Essay on Man*. She draws attention to Pope's awareness of the revelation of a plurality of worlds, both on the macro- and micro-scopic scale, and his wish to reconcile this with the older tradition of 'the Great Chain of Being' and a God-directed universe. The book's survey of Pope's interest in, and use of, 'the small in Nature' in his poetry is extremely brief (pp. 243-51), and concentrates mostly on the well known and often discussed 'insect' imagery. As Nicolson and Rousseau conjecture, Pope's scant references to the microscope, a popular toy for over fifty years by the time of his maturity, can probably be attributed to his increasingly poor eyesight — something he liked to feel he had in common with Horace — a complaint he refers to several times in his poetry.

In his fairly copious *Correspondence* there is only one reference to his being present at a microscopical demonstration. On 18 February 1718, writing to his friend John Caryll, he mentions that he had lately struck up an acquaintanceship with a Mr Hatton, a clockmaker, 'who is like wise curious in microscopes and showed my mother some of the *semen masculinum*, with animacula in it'.<sup>5</sup> Edwin Abbott's *Concordance* to Pope's major poetry lists no occurrence of the word 'telescope' (though 'glass' in this sense does occur several times); 'microscope' and its adjective 'microscopic' appear only once each (*Dunciad* IV, 1.233; *E.M.*, 1.193). However, to explore some of Pope's poetry, in which the very small seems to play a part, is not without its interest.

4 *This Long Disease My Life: Alexander Pope and the Sciences* (Princeton, 1968).

5 *Correspondence* ed. G.W. Sherburn, 5 vols. (Oxford, 1956).

The poem that comes most readily to mind is *The Rape of the Lock*, often praised for its miniaturization of epic poetry, and for the iridescent, minute world of the Sylphs which substitutes, by inversion, for the epic machinery of the Gods and Goddesses of Olympus in *The Rape's* epic counterparts. The two-canto version, lacking the machinery of the Sylphs, was published in 1712; the familiar, expanded, five-canto version was published in 1714, a period just subsequent to Pope's failed attempts at learning to paint. It was also a period just after that in which for some time Addison and Steele, in *The Spectator*, were debating the function and value of the microscope both satirically and seriously and even Swift was buying a microscope for Stella.

One of the most often cited passages in *The Rape of the Lock* in this connection is the passage in Canto II (ll. 122-32) which details the punishments due to Sylphs who neglect their duties:

Whatever spirit, careless of his charge,  
His post neglects, or leaves the fair at large,  
Shall feel sharp vengeance soon o'ertake his sins,  
Be stopped in vials, or transfix'd with pins;  
Or plunged in lakes of bitter washes lie,  
Or wedged whole ages in a bodkin's eye:  
Gums and pomatums shall his flight restrain,  
While clogg'd he beats his silken wings in vain.

In order to see more fully the qualities of this passage, one might put beside it an analogous passage from a later, minor poem usually attributed to Pope, "The Words of the King of Brobdignag, As He Held Captain Gulliver between His Finger and Thumb":<sup>6</sup>

In Miniature see *Nature's* Power appear;  
Which wings the Sun-born Insects of the Air,  
Which frames the Harvest-bug, too small for Sight,  
And forms the Bones and Muscles of the Mite!  
Here view him stretch'd. The Microscope explains,  
That the Blood, circling, flows in human Veins;  
See, in the tube he pants, and sprawling lies,  
Stretches his little Hands, and rolls his Eyes!

Here the clear intention is to present Gulliver in the context of a microscope demonstration and the scale of the visual scene is Brobdignagian; Gulliver appears small, not only to the King's eyes, but also to the 'eye' of the reader. The reader is offered for

6 Printed in the Twickenham one-volume text of Pope's poetry, ed. M. Mack, p. 489.

inspection a tiny creature struggling in a test-tube or vial and the vocabulary in general enhances the sense of very small scale — *miniature, insects, bug, small, mite*, all conduce to emphasize the smallness of the visual image. Commenting on the passage quoted from *The Rape of the Lock*, Nicolson and Rousseau write of the Sylphs (p. 247): ‘Their minuteness is seen in the passage on punishments . . .’. But is this so? Are they to be seen as *minute* at this point in the poem?

Pope had introduced the Sylphs some seventy lines earlier in the poem as they attend Belinda on her pleasure-boat:

He summons straight his denizens of air;  
The lucid squadrons round the sails repair:  
Soft o'er the shrouds aerial whispers breathe,  
That seemed but zephyrs to the train beneath.  
Some to the sun their insect-wings unfold,  
Waft on the breeze, or sink in clouds of gold.

(II, ll. 55-60)

Allowing that the scene described is an allegorical fancy, it seems fair to say that at this point if it is visualized, the Sylphs bear a normal scale-relationship to their charges (the boat and its human cargo), a scale similar to that borne by the Cupids, *putti*, Favouring Breezes, etc. that occur in paintings on similar allegorical themes, such as the almost contemporary *Embarkation from Cythera* by Antoine Watteau, or the well known *Birth of Venus* by Sandro Botticelli. The Sylphs are endowed with human passions and human psychology, and, while there is in the long passage describing them and their duties a certain amount of Miltonic and Classical parody that by implication trivializes their duties, there is nothing in the vocabulary, unlike that of the ‘Gulliver’ verses, which *requires* them to be visualized as minute.

With the introduction of the punishments meted out to neglectful Sylphs the situation changes. The visual imagery and the vocabulary now seek to be precise about the scale-size of things as Pope *does* begin to miniaturize the image: ‘Be stopp’d in vials’ is the direct equivalent of ‘Sec, in the Tube he pants’ of the Gulliver passage, while ‘transfix’d with pins’ evokes the ‘sprawling’ image of the butterfly pinned to the collector’s board. Pope then seeks to miniaturize the Sylphs even further, pushing the visual imagery beyond the bounds of unaided human perception; in doing so he enters into the realm of the microscope, revealing a whole new world, strange and beautiful.

Now the visual image of the Sylph becomes suddenly *highly* enlarged, as the creams and lotions on the dressing-table assume the dimensions of 'lakes' and the 'bodkin's eye' is seen as a restraining trap. Pope here offers the bodkin-eye as being perceptible to unaided human sight (at least in the imagination). But, as Robert Hooke had pointed out, and illustrated, in the very first of the demonstrations in *Micrographia* (pp. 1-2) the real appearance of needles and bodkins cannot be seen or known without the aid of the microscope:

But if viewed with a very good microscope, we may find that the top of a needle (though as to the sense very sharp) appears a broad, blunt, and very irregular end; not resembling a cone, as is imagined, but only a piece of a tapering body, with a great part of the top removed, or deficient . . . . The image we have here exhibited in the first Figure, was the top of a small and very sharp needle, whose point 'a' nevertheless appeared through the microscope above a quarter of an inch broad, not round nor flat, but irregular and uneven; so that it seemed to have been big enough to have afforded a hundred armed mites room enough to be ranged by each other without endangering the breaking of one another's necks, by being thrust off on either side.

Paradoxically, the image in Pope's lines here is not one of miniaturization but of *extreme magnification*. The effect is as if, while perusing the realistic, human-scale prose of *Micrographia*, one is suddenly confronted with one of the the grossly magnified images on the engraved plates which so lavishly illustrate the work. We cannot experience the beauty and pathos of the Sylph's struggle in the 'gums and pomatums' unless we grossly alter our scale of conceptual perception: it is towards the image of Milton's Satan struggling on the Burning Lake (*P.L.* I, ll. 193 ff) that the mind's 'eye' moves. A moth fluttering in a jar of face-cream is simply a mess.

What has been happening from l. 123 onwards is a gradual *reduction* in the scale of the Sylphs as compared to the scale of the 'real' world of *The Rape of the Lock*, by a process analogous to that of focusing down on an object with a microscope; a new world, with its own beauty and pathos is revealed. Pope reverses this process by a gradual return of the image to the scale of unaided human perception as the Sylph is compared, both in size and pathos, to a faded flower, and then to the size of the wheel on the chocolate-grinder — both perceptible without magnification. This having been done, the poem once again offers the Sylphs as taking an integral part in the continuing 'real' action of the poem.

Another passage from *The Rape of the Lock* often praised for its exquisite miniaturization of epic combat is the Game of Ombre played out between Belinda and the Baron in Canto III, ll. 37-100. The passage is too long to quote in full but its opening contains most of the elements which are further developed in the scene:

Behold, four Kings in majesty revered,  
 With hoary whiskers and a forky beard;  
 And four fair Queens, whose hands sustain a flower,  
 The 'expressive emblem of their softer power;  
 Four knaves in garbs succinct, a trusty band;  
 Caps on their heads, and halberts in their hand;  
 And party-colour'd troops, a shining train,  
 Drawn forth to combat on the velvet plain.

(III, ll. 37-44)

An analogous passage, valuable for comparison and contrast, can be found in Swift's *Gulliver's Travels* (Bk. I, A Voyage to Lilliput, ch. iii) in which Lemuel Gulliver superintends a Lilliputian military display:

I had the good Fortune to divert the Emperor one Day, after a very extraordinary Manner. I desired he would order several Sticks of two Foot high, and the Thickness of an ordinary Cane, to be brought me; whereupon his Majesty commanded the Master of his Woods to give Directions accordingly; and the next Morning six Wood-men arrived with as many Carriages, drawn by eight Horses to each. I took nine of these Sticks, and fixing them firmly in the Ground in a Quadrangular Figure, two Foot and a half square; I took four other Sticks, and tyed them parallel at each Corner, about two Foot from the Ground; then I fastened my Handkerchief to the nine Sticks that stood erect; and extended it on all Sides, till it was as tight as the Top of a Drum; and the four parallel Sticks rising about five Inches higher than the Handkerchief, served as Ledges on each Side. When I had finished my Work, I desired the Emperor to let a Troop of his best Horse, Twenty-four in Number, come and exercise upon this Plain. His Majesty approved of the Proposal, and I took them up one by one in my Hands, ready mounted and armed, with the proper officers to exercise them. As soon as they got into Order, they divided into two parties, performed mock Skirmishes, discharged blunt Arrows, drew their Swords, fled and pursued, attacked and retired; and in short discovered the best military Discipline I ever beheld.

In this passage vocabulary and imagery continuously assert the human scale of the viewpoint; precise dimensions are reiterated, comparisons are from the humanly familiar ('the thickness of an ordinary cane', 'tight as the top of a drum'). That the field of action is to be kept in mind as a *handkerchief* is stressed by repetition of the word, not only in the portion quoted but in the continuation of Swift's text. The small size of the Lilliputian cavalry is emphasized

by the comparisons with Gulliver's hands ('I took them up one by one in my hands' and, later in the text, 'covering the hole with one hand, I set down the troop with the other, in the same manner as I took them up'). Swift emphasizes the smallness of the Lilliputians by requiring the reader's visual imagination to observe the difference in scale between them and Gulliver. Tying his description firmly to precise measurements and the homely handkerchief, he anchors his scene in 'reality' and forces his readers to accept it as actuality. In the Game of Ombre Pope's vocabulary moves firmly and continuously in the other direction, not only in the opening quoted, but throughout the seventy-odd lines as a whole.

Swift's field of action was a handkerchief; Pope's is a green-baize-covered card-table, but his description aims to 'enlarge' this fact, both in physical dimension and imaginative reality. Nowhere in the passage as a whole is the table named as a table, but as a *velvet plain*, *verdant field*, *level green* (ll. 44, 52, 80.) All of these epithets can serve as a description of the surface of a card-table, but they might equally be applied to the level plain before Troy, where the action of *The Iliad* is played out. 'Field', 'green', 'plain' when considered from the viewpoint of normal, human scale, denote areas of fair extent — wheatfield, bowling green, open plain.

In the Swift passage, the reader is always aware that it is Gulliver who is in charge, that it is Gulliver's hands which do the initial deployment. The troops carry out their manoeuvres in an unembellished way, as 'they divided into two parties, performed mock skirmishes, discharged blunt arrows, drew their swords, fled and pursued, attacked and retired'. The diction presents the Lilliputians as subjects for disinterested, scientific observation; their passions and psychology form no part of the description. In the Pope passage the reader is also reminded from time to time that it is Belinda and the Baron who are in charge of the action, but once the cards are put into play, they take on a life of their own. The vocabulary comes almost equally from card-games and from military warfare, so that the reader is undecided as to what is required to be visualized; no physical properties of playing-cards are mentioned in the passage, indeed the word 'card' appears only once (l. 54). Much of the vocabulary of typification is military — 'a trusty band', 'party-colour'd troops', 'combat' (ll. 41-44) are only some of numerous examples in the passage as a whole. The verse stresses the visuality of the scene it is describing and, in doing so, greatly enlarges and transfigures the visuality of the playing-cards on which it is based; 'four fair Queens, whose hands sustain a

flower', 'Th'embroider'd King who shows but half his face', 'The Knave of Diamonds', 'The Queen of Hearts' (ll. 39, 76, 87-88). Once they are in play the cards manifest human passions and human psychology, diverse as their human equivalents are diverse: the pride and power of Spadillio, the manliness of the King of Spades, the rebel Knave of Spades, his Amazonian Queen, the pride and pomp of the King of Clubs, the wiliness of the Knave of Diamonds, the effrontery of the Ace of Hearts, the gallantry and righteous indignation of the King. Were the names altered to Agamemnon, Menelaus, Hector, etc., there would be little left to suggest that the passage was not a sincere attempt at epic writing.

The Game of Ombre scene is not a digression or an interpolation in *The Rape of the Lock*; it has an integral role to play in the dramatic and moral action of the poem as a whole. Yet if the poetry of the scene is to be experienced as much more than an exercise in verbal legerdemain on Pope's part, or the fanciful embroidery of a social commonplace, then the reader must respond to what is there in the text; and what is there in the text is not only a card-game, but an imagined world of mediaeval panoply and epic splendour. This is achieved basically by removing the action from the 'real' time and space in which *The Rape's* human drama and social action are set, and then by creating a highly visual scene whose scale has its own correspondence to that of the unaided human eye. Details from the playing-cards — the flowers borne by the Queens, the orb in the hand of the King of Clubs — are highly magnified visually, take on their own iconographic significance, and are informed with their own moral and aesthetic meaning. Belinda and the Baron then are seen to have acquired a different 'stature' so to speak — they are another Zeus and Hera playing with human lives. Viewed from this perspective *The Iliad* itself might well be seen as the account of a game of cards, played by Olympian players.

In *The Rape of the Lock* passages such as those describing the punishment of the Sylphs, or the Game of Ombre, form only part of a complex whole. Yet they do radically alter the scale of perception and cognition of that whole, keeping the poem just slightly off balance, preventing it from becoming a mere prettified account of a social indiscretion. If the world of Hampton Court is 'real' then the world of the Sylphs and the card-game, as presented by Pope, is 'sur-real'.<sup>7</sup> The disequilibrium experienced by the reader in trying

7 The 'Cave of Spleen' episode (Canto IV, ll. 11-88) is another such excursion into a different time and space, the surreality of abnormal psychology.

to accommodate the eye of the imagination to abrupt changes in scale supports the moral disjunction in the Hampton Court world which the poem posits at its beginning, a world where 'Bibles' co-exist with 'billets-doux' (I, l. 138) and both seem to have an equal moral stature — or none.

In their survey of Pope's interest in 'the small in Nature', Nicolson and Rousseau note the frequency of 'insect' metaphors in both his verse and prose writing. The use of insect-imagery in Pope's poetry is a commonplace of literary criticism, but what is seldom if ever noticed is that this imagery is usually derogatory of its own content-referents, dismissive and/or disgusting. To look at some of these images in terms of their own latent content-statement is also not without interest.

In his *Essay on Man* Pope praises the spider for example (I, 217-18) as an exemplar, knowing and keeping its place in the Great Chain of Being:

The spider's touch, how exquisitely fine!  
Feels at each thread, and lives along the line.

However, when in the *Epistle to Dr Arbuthnot* (ll. 89-94) the spider is seen as a creature of the natural world rather than as an exemplar of Divine order, and appropriated as a metaphor for something which Pope feels to be morally despicable and disgusting, then the spider too is seen in the same light:

Who shames a scribbler? break one cobweb through,  
He spins the slight, self-pleasing thread anew:  
Destroy his fib or sophistry, in vain,  
The creature's at his dirty work again,  
Throned in the centre of his thin designs,  
Proud of a vast extent of flimsy lines!

This says as much about Pope's attitude to spiders, themselves one of the subjects of Hooke's *Micrographia*, as it does about his attitude to critics. The Sylphs of *The Rape of the Lock* are, of course, offered as insect-like creatures of great charm and beauty, insects, it might be noted, not out of Nature but out of Pope's own creative mind:

Transparent forms, too fine for mortal sight,  
Their fluid bodies half dissolved in light.  
Loose to the wind their airy garments flew,  
Thin glittering textures of the filmy dew,  
Dipp'd in the richest tincture of the skies,

Where light disports in ever-mingling dyes;  
 While ev'ry beam new transient colours flings,  
 Colours that change whene'er they wave their wings.

(II, ll. 61-68)

In the *Epistle to Dr Arbuthnot*, in lines that stress the *unnatural* nature of Sporus, the metaphorical counters are the same, but the vision of them is different:

Yet let me flap this bug with gilded wings,  
 This painted child of dirt, that stinks and stings.

(ll. 309-310)

In *The Dunciad* (IV, l. 538) political intrigue is imaged as 'Int'rest that waves on party-colour'd wings'. One of the most devastating reversals of attitude to insects occurs in *Epistle to a Lady*, where Sappho, applying her make-up at the dressing-table, is a direct counterpart to Belinda in *The Rape of the Lock* and the beauty and pathos of the distressed Sylph clogged in 'gums and pomatums' discussed earlier:

Rufa, whose eye quick glancing o'er the park  
 Attracts each light gay meteor of a spark,  
 Agrees as ill with Rufa studying Locke,  
 As Sappho's diamonds with her dirty smock;  
 Or Sappho at her toilet's greasy task,  
 With Sappho fragrant at an evening mask:  
 So morning insects, that in muck begun,  
 Shine, buzz, and fly-blow in the setting sun.

(ll. 21-28)

If one examines the insect imagery of most of Pope's poetry, and looks at its content and the attitude to that content which is present, what is revealed to a great extent is a great dislike, even fear, of insects, not so much for insects in themselves — they have a necessary though lowly place in God's creation — but of what they represent by implication, as signifiers of the advancement of scientific knowledge. Most of Pope's poetry was written at the height of the popularity of the microscope in England, yet, unlike his contemporaries Swift and Addison, Pope used it directly only once as a device for satire, and then in a most unflattering and disparaging way:

The critic eye, that microscope of wit,  
 Sees hairs and pores, examines bit by bit:  
 How parts relate to parts, or they to whole,  
 The body's harmony, the beaming soul,

Are things which Kuster, Burman, Wasse shall see  
When man's whole frame is obvious to a flea.

(*Dunciad* IV, ll. 233-8)

The intent to disparage the 'critic eye' is plain enough, but there is embedded in the image a criticism of microscopy itself, a statement that scientific activity can lead only to partial knowledge, never to full or true — and 'true' for Pope means 'confirming the Divine order'. There is even a rather quaint attempt to disparage the flea itself, since the contemptuous 'throwaway' tone at the end of the passage implies 'And that will be Never.'

The flea got into this passage partly for the sake of the rhyme, partly because the louse and the flea were rhetorical stereotypes of insignificance in many Augustan writers, and had a long literary history — but perhaps also because studies of the flea form one of the most beautiful and detailed double-plates in Hooke's *Micrographia*, a work printed for that same Royal Society which Pope will disparage by name some lines later in the poem. The description which accompanies the plate is, in its own way, as imaginatively beautiful as Pope's description of the Sylphs or the Game of Ombre. Hooke was not quite attuned to Sprat's later desire for a 'naked, natural way of speaking':

The strength and beauty of this small creature, had it no other relation at all to man, would deserve a description.

For its strength, the microscope is able to make no greater discoveries of it than the naked eye, but only the curious contrivance of its legs and joints, for the exerting that strength, is very plainly manifested, such as no other creature I have yet observed has anything like it . . . The parts of the hinder legs . . . bend within one another, like the parts of a double-jointed ruler, or like the foot, leg and thigh of a man; these six legs he clutches up altogether, and when he leaps, springs them all out, and thereby exerts his whole strength at once.

But, as for the beauty of it, the microscope manifests it to be all over adorned with a curiously polished suit of sable armour, neatly jointed, and beset with a multitude of sharp pins, shaped almost like a porcupine's quills, or bright conical steel-bodkins. The head is on either side beautified with a quick and round black eye, behind each of which also appears a small cavity, in which he seems to move to and fro a certain thin film beset with many small transparent hairs, which probably may be his ears.

Compare this with Pope's highly magnified image of Belinda's pincushion, in *The Rape of the Lock* (I, l. 137):

Here files of pins extend their shining rows.

Is there any difference in scale or perception between Pope's

evocation of the pins as files of soldiery in armour (appropriate for the para-military activity of Belinda 'arming' herself) and Hooke's evocation of the 'sable armour' of the flea?

Pope's *Dunciad* contains a great deal of satire on 'collectors' and virtuosi, most of it in Book IV. It is satire of a kind which, as Nicolson and Rousseau observe (p. 252), 'had been old when Pope was young'. The wonder is, perhaps, that it should be there at all. In Book IV, Pope gives a picture of the supplicant 'collectors' making their offerings to the goddess Dulness:

Each with some won'rous gift approached the power,  
A nest, a toad, a fungus, or a flower.

(ll. 399-400)

Here the vocabulary is direct, and the satiric intention is plain: the very gifts proffered are stereotypes of this kind of satire, and go back through *The Spectator* and Ned Ward to Shadwell's *The Virtuoso* at least. A couplet a little later in the same passage, where Dulness is awarding consolation prizes, is more ambiguous:

The mind, in metaphysics at a loss,  
May wander in a wilderness of moss.

(ll. 449-50)

This is meant to be taken ironically, to see the contrast between the pursuit of 'higher Truth' (metaphysics) and the pursuit of the trivial. As with the example of 'flea' discussed previously, one can sense the contemptuous dismissiveness of 'moss' and the implied intellectual pointlessness of such a study. But the words 'wander' and 'wilderness' have resonances which the reader must also respond to: 'wander' can relate to its Latin equivalent *errare*, which comes back into English in 'to err', 'to be in error' doctrinally or morally (senses which 'wander' itself, as cited in the OED, already had in Pope's day). 'Wilderness' has biblical connotations of moral error and the confusion of this life (often, again says the OED, contrasted with the certainties of Heaven). 'Wilderness' is also a term for landscape-gardening, an art in which Pope was both a theorist and practitioner; there it denotes an ornamental planting of trees, usually in the form of a labyrinth or maze. One begins to sense in Pope's 'wilderness of moss' a sense of the human mind becoming confused — but whose mind is it? Moss was, of course, one of the subjects described and illustrated in *Micrographia*, and Pope's contemptuous dismissal may be contrasted with Hooke's celebratory prose:

Moss is a plant that the wisest of kings thought neither unworthy his speculation nor his pen, and though amongst plants it be in bulk one of the smallest, yet it is not the least considerable: for, as to its shape, it may compare for the beauty of it with any plant that grows, and bears a much bigger breadth; it has a root almost like a seedy parsnip, furnished with small strings and suckers, which are all of them finely branched, like those of the roots of much bigger vegetables . . . .

We know there may be as much curiosity of contrivance and excellency of form in a very small pocket-clock, that takes up not an inch square of room, as there may be in a church-clock that fills a whole room. And I know not whether all the contrivances and mechanisms requisite to a perfect vegetable, may not be crowded into an exceedingly less room than this of moss, as I have heard of a striking-watch so small, that it served for a pendant in a lady's ear . . . And by comparing the bulk of moss with the bulk of the biggest kind of vegetable we meet with in story (of which kind we find in some hotter climates, as Guinea and Brazil, the stock or body of some trees to be twenty foot in diameter, whereas the body or stem of moss, for the most part, is not above one sixtieth part of an inch) we find that the bulk of the one will exceed the bulk of the other, no less than 2985984 millions.

(*Micrographia*, p. 131)

As exhibited both in his landscaping activities and his poetry, Pope's view of the natural world had no place for the kinds of Nature that Hooke was suggesting existed. Pope's own view is a combination of the moral certainties of the Great Chain of Being, and the kind of Virgilian normalcies of Nature implied in such scenes as that in the opening section of *Windsor Forest*:

Here hills and vales, the woodland and the plain,  
 Here earth and water seem to strive again;  
 Not chaos-like together crush'd and bruis'd,  
 But, as the world harmoniously confused:  
 Where order in variety we see,  
 And where, though all things differ, all agree.  
 Here waving groves a chequer'd scene display,  
 And part admit, and part exclude the day;  
 As some coy nymph her lover's warm address  
 Not quite indulges, nor can quite repress.  
 There, interspersed in lawns and opening glades,  
 Thin trees arise that shun each others shades.  
 Here in full light the russet plains extend:  
 There, wrapt in clouds the bluish hills ascend.

(ll. 11-24)

Pope brings Dulness and the Royal Society clearly together when the goddess awards her distinctions:

Next, bidding all draw near on bended knees,  
 The queen confers her titles and degrees.  
 Her children first of more distinguished sort,

Who study Shakespeare at the Inns of Court,  
 Impale a glow-worm, or vertú profess,  
 Shine in the dignity of F.R.S.

(*Dunciad* IV, ll. 565-70)

Of this passage Nicolson and Rousseau remark:

The Royal Society, indeed, comes off lightly, since these are merely passing references to a once time-honoured theme of satire. There is no . . . animus or bitterness here. (p. 252)

One may question this assessment. As evidenced in his poetry, Pope's sense of the natural world was one in which 'Whatever is, is right' (*E.M.* I, l. 294) and 'Where order in variety we see / And where, though all things differ, all agree' (*W.F.* ll. 15-16). To such a mind the work of the Royal Society, and the revelations contained in Hooke's seminal work, would surely have seemed, along with the microscope itself, both confusing and disturbing.

Of the three great advances in optics — microscopy, telescoping, transmission of light — made in his lifetime, only Newton's revelation of the properties of the prism seem to have attracted Pope positively as material for poetic creativity, his best achievement being the creation of the Sylphs in *The Rape of the Lock*. Telescoping made available to him the metaphysics of his *Essay on Man*. Microscopy he seems to have consciously recoiled from, though in doing so he created a different kind of poetry.

Newton's *Opticks*, first published in 1704, and its revelation that white light was a combination of colours, may have attracted Pope because of the interest in painting that he was himself developing from about that time until just after the period of composition of *The Rape of the Lock*. The avoidance in his work of almost any conscious use of the microscope, either for satire or celebration, may have been due, as Nicolson and Rousseau surmise, to his chronically poor eyesight. A number of times in his verse Pope draws attention, in a somewhat coy way, to his defective sight, something more he felt that he and Horace had in common. One of the more extended references occurs in his 'imitation', *The First Epistle of the First Book of Horace*, addressed to his long intimate friend Lord Bolingbroke, when Pope was middle aged:

Late as it is, I put myself to school,  
 And feel some comfort not to be a fool.  
 Weak though I am of limb, and short of sight,  
 Far from a lynx, and not a giant quite;

I'll do what Mead and Cheselden advise,  
To keep these limbs, and to preserve these eyes.

(ll. 49-52)

It is not without its irony that the couplet from Horace that Pope is here adapting, somewhat smugly, to himself (Horace, *Ep.* I, ll. 29-30) should also have been used, so many years before, as the epigraph on the title-page of Robert Hooke's *Micrographia*:

*Non possis oculo quantum contendere Linceus  
Non tamen idcirco contemnas lippus inungi.*

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