Defoe and the swallows

BY RICHARD GARNETT

IN DESCRIBING a journey undertaken in 1722 in his *Tour of Great Britain* (1724), Daniel Defoe gives an account of migrating swallows which is remarkably accurate and intelligent in its statement not only of the facts but also of the reasons for migration. It flies in the face of the theories held by many naturalists at the time, to say nothing of those which he was probably taught in his youth, and it thus gives an interesting indication of the strength of his common sense and discrimination.

When Defoe was about fourteen he was sent to the academy for Dissenters run by the Rev. Charles Morton, an exceptional teacher who happened to hold even more exceptional views on bird migration. At that time, around 1674, Dissenters were debarred from Oxford and Cambridge, and Morton in his large house at Newington Green did his best to give fifty of their sons a university education. "He had", according to Edmund Calamy, "indeed a Peculiar Talent, of winning Youth to the Love of Virtue and Learning, both by his Pleasant Conversation, and by a Familiar Way he had of making difficult Subjects easily Intelligible." One can see from his little didactic works that he understood how to appeal to young pupils. In *The Little Peace-maker* the spirited dialogue between its protagonists, "*Eumenius* peaceable, quiet" and "*Thermos* hot, hasty", is written in words which his pupils would not only understand but might well have spoken themselves. Had Defoe needed to learn how to write lively dialogue, he could have done so from his tutor.

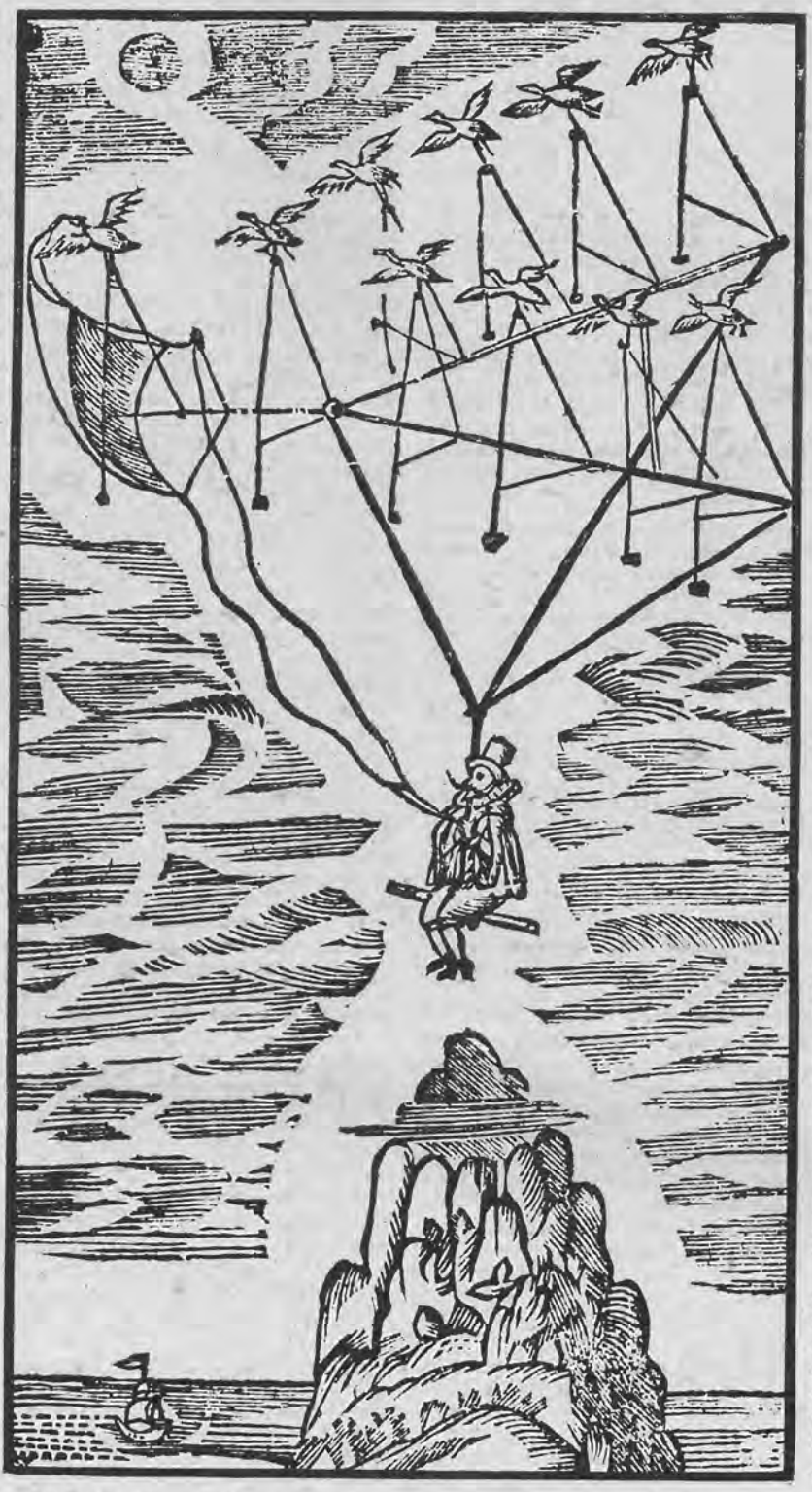
Morton had been a gifted mathematician at Oxford, and, according to Calamy, a favourite pupil of Bishop John Wilkins, the Warden of Wadham, whose entertaining *Mathematical Magick*, published in 1648, describes real land-yachts and hypothetical submarines and flying-machines. John Robert Moore in his life of Defoe gives several instances where Defoe speaks highly of Morton's power as a teacher, particularly of mathematics and science.

Morton was, however, so persecuted by the Church of England and "so infested with Processes from the Bishop's Court" that he was finally forced to emigrate to Massachusetts in 1685 or 1686. There he became celebrated as a scientific lecturer, first of all teaching rebellious Harvard students (*plus ça change . . .*) at Charlestown, and later at Harvard, where he eventually became the first vice-president. He compiled his own manuscript textbook, and this *Compendium Physicae* became the basis of the teaching of natural science there for forty years. Several texts survive, and one was published by the Colonial Society of Massachusetts in 1940.

There is, strangely enough, nothing about the migration of birds in his *Compendium Physicae*, for Morton's most popular published scientific work is concerned with nothing else. Its title is based on Jeremiah viii, 7: "The stork in the heaven knoweth her appointed times: and the turtle and the crane, and the swallow, observe the time of their coming." Calamy mentions two such titles, one of which agrees with that of an undated tract, signed "C.M.", reprinted in *The Harleian Miscellany* (1744, ii, 558-67) and there attributed to Morton. Donald Wing hints in an unfulfilled cross-reference at publication in 1699, the year after Morton died, but there is some reason, as we shall see, for thinking that the book was current by the time Morton went to America. The text quoted here is the earliest I have seen. "*An Essay Towards the Probable Solution of this Question. Whence come the Stork, and the Turtle . . .* By a Person of Learning and Piety. Printed for Samuel Crouch, 1703."

Morton's solution to the problem of the stork and the turtle, in so far as it is based on non-biblical arguments, is an unwitting form of *reductio ad absurdum*, a process of elimination based almost entirely upon negative evidence. The birds do not go to some other part of the Earth, for, if they did, "'tis likely that some one would in one Age or other have discovered the Place". They do not lie

in Clay-lumps in the bottom of Rivers . . . because Water and Earth are too cold Quarters in the Winter for such Summer *Birds*: besides, if they should have no occasion for Breath while they lie in their Sweeven or Winter Sleep, yet in the Spring Morning, when they should awake, it is scarce conceivable how their Feathers should be in a Trim to lift them out of Water.



Domingo Gonsales's voyage to the moon, from The Man in the Moone.

And "no curious Persons, inquisitive into the Nature of Things" had been able to "procure any of those *sleeping Swallows*, to observe the Progress of Nature concerning them". Given these premises, the solution is inescapable: the missing bird

is not in any other Parts of the Earth; and since . . . it cannot abide six Months in the Air, no more than *Noah's Dove*, which was as good a flyer, yet wanted a resting Place for the sole of her Foot, it must go unto, and remain in some one of the Cœlestial Bodies, and that must be the Moon.

Morton admits that this argument may be open to some objections, and launches into them with a fine flourish of mathematics and disregard of observed fact. Objection one: the distance to the Moon (which he has no difficulty in calculating) and the time available for migration (six weeks there and six weeks back) are such that the bird would have to fly at the inconceivable rate of 166¾ m.p.h. Answer: it might take longer on the journey and reduce the speed to 125 m.p.h. Moreover, "I have heard that Race-Horses have moved at the rate of 5 m. in a minute; this comes to 300 m. in an Hour." Few of Morton's contemporaries could have been so unfamiliar with horses, and most of them should have been able to tell him that this was about ten times their maximum speed. Defoe himself was to relate in his *Tour* how a Mr. Nicks robbed a man at Gad's Hill at four o'clock one morning and established an effective alibi by galloping full tilt to York and accosting the Lord Mayor on a bowling-green at "a quarter before or a quarter after Eight at Night". The jury, more incredulous than Morton, could not believe that he could have got there so quickly, and so they acquitted him.

Other objections follow thick and fast, and are dealt with so confidently that one cannot help thinking that some at least are things of straw, put up only to be knocked down—number five, for instance:

But all this Discourse is grounded upon the *Copernican Scheme*, and the New Motions of Philosophy, which are yet under Debate; but if all this be mistaken, then so are all your Conjectures.

Not once does Morton offer any evidence based on what he has actually seen birds do, nor does he consider why certain kinds of birds should need to migrate anywhere, let alone to the moon.

William Eagle Clarke in his *Studies in Bird-Migration* (1912) has called this "perhaps the most extraordinary theory ever propounded" on the subject, and with good reason. But Morton's theory, though odd, was not entirely original. His mentor at Oxford, Bishop Wilkins, had probably put it into his head by writing *The Discovery of a World in the Moone* (1638). His thirteenth and fourteenth propositions are "That tis probable there may be inhabitants in this other World; but of what kinde they are, is uncertaine" and "That tis possible for some of our posterity to finde out a conveyance to this other world, and if there be inhabitants there, to have commerce with them."

While Wilkins was the first man to consider space-travel a scientific possibility, he was not the only bishop to write of the subject at this time. At the very end of the third edition of his book (1640) he remarks:

Having thus finished this discourse, I chanced upon a late fancy to this purpose under the feigned name of *Domingo Gonsales*, written by a late reverend and learned Bishop: In which (besides sundry particulars wherein this later Chapter did unwittingly agree with it) there is delivered a very pleasant and well contrived fancy concerning a voyage to this other world.

He supposeth that there is a naturall and usuall passage for many creatures betwixt our earth and this planet . . . he supposeth the Swallowes, Cuckoes, Nightingales, with divers other fowle, which are with us only halfe the year, to flye up thither, when they goe from us.

This "late reverend and learned Bishop" was Francis Godwin, Bishop first of Llandaff and later of Hereford. It is difficult for a modern reader to decide how seriously this charming and "well contrived fancy" should be taken. It was entitled *The Man in the Moone, or a Discourse of a Voyage Thither*" by Domingo Gonsales, The speedy Messenger", and was published in 1638. It tells how Gonsales, "the Little Spaniard", having trained twenty-five "Gansas" or wild swans to lift an engine supported by pulleys of cork, was eventually carried up to the moon and returned in due course to China. Apart from some straightforward explanation of the Copernican system and the laws of gravitation, its chief purpose seems to be to entertain, and "E.M." in his prefatory note "To the Ingenious Reader" disarmingly remarks: "It was not the *Authors* intention (I presume) to discourse thee into a beliefe of each particular circumstance."

Whether as a result of these two bishops' writings, or because of Morton's book, the lunar theory was well enough known and seriously enough considered by 1687 for Dryden to write of his allegorical swallows in the Third Part of *The Hind and the Panther*:

They try their flutt'ring wings, and trust themselves in air,
But whether upward to the moon they go,
Or dream the winter out in caves below,
Or hawk at flies elsewhere, concerns us not to know.

But there is no doubt what Defoe thought of the lunar theory and its proponents, "the fine pretenders" as he calls them, for he uses a lively burlesque of it in his political satire, *The Consolidator*, which appeared in 1705. The Consolidator, the aerial chariot by which the moon-voyage is undertaken, is an allegory for the House of Commons, and the 513 feathers by which it is propelled are the members of Parliament.

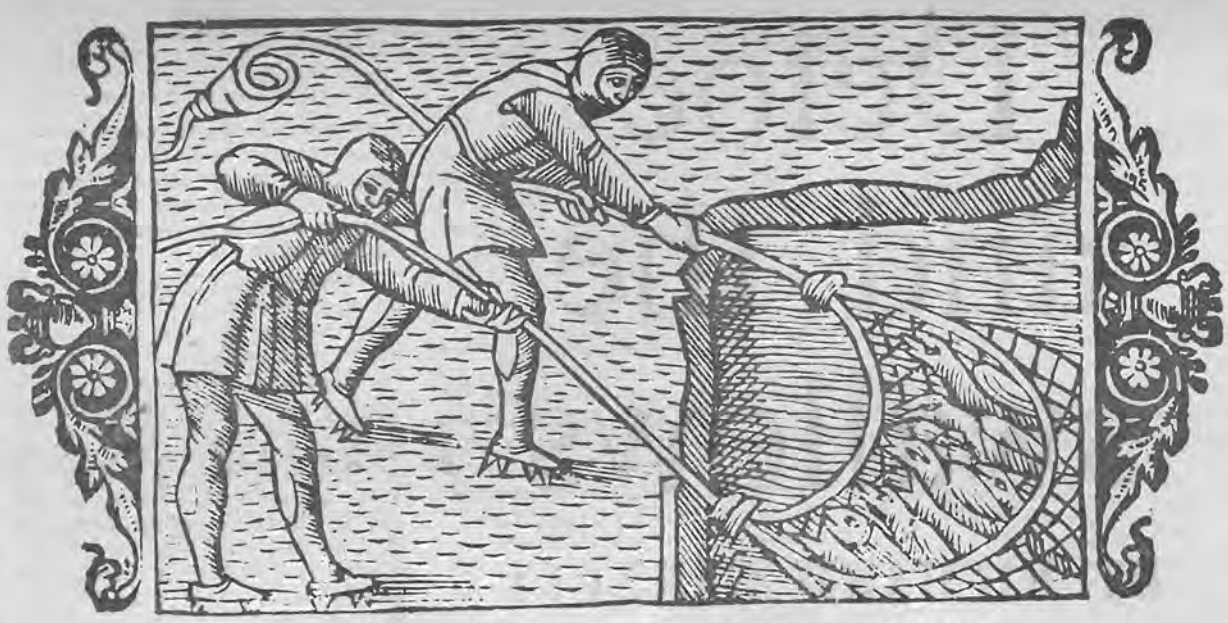
Although Morton's book seems to have appealed to the general reader, for it was reprinted as late as 1739, eight years after Defoe died, I cannot find that any naturalist took it seriously in the eighteenth century. The official view was divided between Dryden's last two alternatives, hibernation and migration. Many creatures in other branches of the animal kingdom spend the winter in a torpid condition, so that it was not surprising that Aristotle, who recognized that many birds migrate, should also have considered that there were

others that hibernated as if they were squirrels, tortoises, or queen wasps.

The more bizarre form of the theory came later. Swallows have been known to roost in reed-beds just before they migrate, and dead sand-martins are sometimes found in holes in river-banks; and this must have given rise to the notion that swallows hibernate under water. It seems first to have been formulated by Olaus Magnus, an exiled Swedish bishop, in 1555. In the English translation of 1658, his words on the subject are:

> Though many Writers of Natural Histories have written, that Swallows change their stations; that is, when cold Winter begins to come, they fly to hotter Climats; yet oft-times, in the Northern Countries, Swallows are drawn forth, by chance, by Fishermen, like a lump cleaving together, where they went amongst the Reeds, after the beginning of Autumn, and there fasten themselves bill to bill, wing to wing, feet to feet.

A vivid woodcut, shown on the right, illustrates this passage. Two men on a river-bank haul in a miraculous draught of mixed swallows and fishes, making it quite clear that the torpid birds had been totally immersed.



De mixtis Piſcibus cum Hirundinibus.

This view, chiefly due to what Eagle Clarke calls the "baneful influence" of the Hon. Daines Barrington, survived long after Defoe's death. Linnaeus was seduced by it, Gilbert White could never quite shake himself free of it, and Dr. Johnson was very positive about it. In conversation with Boswell in 1768, Johnson admitted that woodcocks migrated, but

> Swallows certainly sleep all the winter. A number of them conglobulate together, by flying round and round, and then all in a heap throw themselves under water, and lye in the bed of a river.

Baron Cuvier, who was born in the following year and became the most autocratic authority on zoology, living well on into the nineteenth century, wrote of the sand-martin in 1817: "Il paraît constant qu'elle engourdit pendant l'hiver, et même qu'elle passe cet état au fond de l'eau des marais". John Hunter, the great anatomist, went to some trouble to fail to induce captive swallows to hibernate in tubs of water and reeds and to support existence without air. Indeed Eagle Clarke, who is unaware of Defoe's account, maintains that "the only writer of any distinction in the eighteenth century who adhered to sound common-sense views on the subject was George Edwards".

In the previous century the hibernation theory had not yet begun to run riot, and the authorities whom Defoe could have consulted were much more cautious. The standard work on birds at the end of the seventeenth century and beginning of the eighteenth was Francis Willughby's *Ornithologia*, which appeared in Latin in 1676 and in an English translation annotated by John Ray in 1678.

At first sight Willughby's remarks on "the Swallow in general" seem very strange to the modern reader, for his chief concern seems to be to establish the utility of the swallow in God's scheme of creation, and its purpose is nothing so prosaic as catching flies and other noxious insects. No, the function of the swallow is medicinal, and seven different receipts are listed, most of them remedies against the falling sickness and the squinancy. One consists of no fewer than a hundred swallows distilled in white wine with castoreum and peony roots. Number six may serve as an example:

> The *Dung* heats very much, discusses, and is acrimonious. Its chief use is against the bitings of a mad dog, taken outwardly and inwardly; in Colic and Nephritic pains taken inwardly, put up it provokes excretion.

After this excursion on the fringes of quackery and alchemy, Willughby proceeds to describe the House Swallow very exactly, and he concludes with admirable sense:

> What becomes of *Swallows* in Winter time, whether they fly into other Countries, or lie torpid in hollow trees, and the like places, neither are natural Historians agreed, nor indeed can we certainly determine. To us it seems more probable that they fly away into hot Countries, *viz. Egypt, Æthiopia*, &c. then that either they lurk in hollow trees, or holes of Rocks and ancient buildings, or lie in water under the Ice in Northern Countries, as *Olaus Magnus* reports.

John Ray in *The Wisdom of God Manifested in the Works of the Creation* (third edition, "very much enlarg'd", 1701) takes bird migration as a matter of fact, and has no doubts about where birds go, but is puzzled only to know how and why. And migration is sensibly discussed in a letter from W. Derham to Hans Sloane in 1708 which was reprinted in the *Philosophical Transactions* of the Royal Society for that year. He takes it for granted that many birds, including swallows, are birds of passage, and his remark that "it may be convenient also to observe how the Winds sit at the same time, especially towards the Sea-coasts" may have given Defoe a hint.

But most inquiring minds were completely open, and this was the line taken by a correspondent printed in Ray's *Philosophical Letters* in 1718. It was written by a Mr. Johnson in 1686, and it shows that Morton's lunar theory was already well enough known to be seriously considered at that date:

> let me know if you can tell anything certain concerning *Birds of Passage*, whither they go, when they leave us? If it be granted that the *Swallow* Kind, and such small Birds, do hide themselves in Rocks or Trees, yet *Storks, Soland-Geese*, and Birds of great Size, cannot possibly do so. The *Moon* is too far a Journey, and a New World in the South temperate Zone methinks they can hardly reach, seeing *Wild-Geese* from Ireland, and *Wood-Cocks* from Norway, come often so tired to us; And yet how they should 'scape the Eyes of so many diligent Enquirers, both by Sea and Land, especially since our Increase of Trade and Navigation, is to me a Matter of no less Difficulty.

These were the views of the experts whom Defoe might have consulted. Whether or not he had read Ray or Derham, he had almost certainly heard Morton's arguments, and there is no doubt that he greatly admired him. Indeed John Robert Moore even goes so far as to say that "Defoe's critical observation of nature began under Morton". So one might expect him to be biased in favour of the moon. Yet in fact his remarks on swallows show him to be, as Moore shrewdly labelled him, a "Citizen of the Modern World".

At the end of his brief description of Southwold, he writes at some length on "our Summer Friends"; and it is worth quoting the passage in full:

> At this Town in particular, and so at all the Towns on this Coast, from *Orford-Ness* to *Yarmouth*, is the ordinary Place where our Summer Friends the Swallows, first land when they come to Visit us; and here they may be said to Embark for their Return, when they go back into warmer Climates; and, as I think the following Remark, tho' of so trifling a Circumstance, may be both Instructing, as well as Diverting, it may be proper in this Place. The Case is this: I was some Years before at this Place, at the latter end of the Year (*viz.*) about the beginning of *October*, and lodging in a House that looked into the Churchyard, I observ'd in the Evening an unusual multitude of Birds sitting on the Leads of the Church; Curiosity led me to go nearer to see what they were, and I found they were all *Swallows*; that there was such an infinite Number that they cover'd the whole Roof of the Church, and of several Houses near, and perhaps might, of more Houses which I did not see; this led me to Enquire of a grave Gentleman whom I saw near me, what the meaning was of such a prodigious Multitude of Swallows sitting there; *O SIR*, says he, turning towards the Sea, *you may see the Reason, the Wind is off Sea*. I did not seem fully informed by that Expression; so he goes on: *I perceive, Sir*, says he, *you are a Stranger to it*; you must then understand first, that this is the Season of the Year when the Swallows, *their Food here failing*, begin to leave us, and return to the Country, *where-ever it be*, from whence I suppose they came; and this being the nearest to the Coast of *Holland*, they come here to Embark; *this he said Smiling a little*; and now Sir, *says he*, the Weather being too calm, or the Wind contrary, they are waiting for a Gale, for they are all *Wind-bound*.
>
> This was more evident to me, when in the Morning I found the Wind had come about to the North-west in the Night, and there was not one Swallow to be seen, of near a Million, which I believe was there the Night before.
>
> How those Creatures know that this Part of the Island of Great-Britain is the Way to their Home, or the way that they are to go; that this very Point is the nearest Cut over, or even that the nearest Cut is best for them, that we must leave to the Naturalists to determin, who insist upon it, that *Brutes cannot Think*.
>
> Certain it is, that the Swallows neither come hither for warm Weather, nor retire from Cold, the thing is of quite another Nature; they, *like the shoals of Fish in the Sea*, pursue their Prey; they are a voracious Creature, they feed flying; their Food is found in the Air, *viz.* the Insects; of which in our Summer Evenings, in damp and moist Places, the Air is full; they come hither in the Summer, because our Air is fuller of Fogs and Damps than in other Countries, and for that Reason, feeds great Quantities of Insects; if the Air be hot and dry, the Gnats die of themselves, and even the Swallows will be found famish'd for Want, and fall down dead out of the Air, their Food being taken from them: *In like manner*, when cold Weather comes in, the Insects all die, and then of Necessity, the Swallows quit us, and follow their Food where-ever they go: this they do in the manner I have mention'd above; for sometimes they are seen to go off in vast Flights like a Cloud: and sometimes again, when the Wind grows fair, they go away a few and a few, as they come, not staying at all upon the Coast. (*Tour*, Letter I 83-5.)

"Near a Million" is an undoubted exaggeration—which Defoe characteristically hedges with "I believe"—and he was mistaken in thinking that all British swallows leave for the Continent by way of East Anglia. His large flock is more likely to have been Continental or Scandinavian swallows, which, whatever Olaus Magnus thought, cross over to England in large numbers on their way south. Defoe oversimplifies the connexion between insects and moisture, but the basic ecology is sound, and he therefore succeeds in giving an accurate and intelligent account of his swallows in spite of the misleading theories of Magnus and Morton; and in spite of his accurate account the most learned zoologists continued to hold mistaken views for nearly a hundred years.

Defoe may, of course, have lifted the whole argument from some other writer whom I have failed to trace. He could equally well have worked it out for himself; for a theory based on an intelligent concern for a good supply of flies to eat is exactly what one might expect from the author who was concerned to chronicle so carefully where Moll Flanders's every guinea and where Robinson Crusoe's next meal were to come from.

Cultural continuities of France

FRANCO SIMONE: *Umanesimo, Rinascimento, Barocco in Francia.* 409pp. Milan: Mursia. L.4,800.

Professor Simone, the distinguished director of *Studi Francesi*, has done more than merely transform our understanding of the literary history of the French Renaissance in a series of books and essays, of which perhaps the most important are *La coscienza della Rinascita negli umanisti francesi* (1949) and *Il Rinascimento francese* (1961). He has also, more importantly, developed an academically acceptable approach to writing that period's cultural history. By measuring the changing attitudes of different Renaissance authors and decades to the past as they knew it, he has succeeded, often brilliantly, in calibrating shifts in literary sensibility, thereby helping to redefine the originality, and the date, of the northern Renaissance.

If the method is not totally original Professor Simone has none the less extracted from it more exciting results than most scholars. Most notably in *Umanesimo, Rinascimento, Barocco in Francia*, he has also extended its application to define the sensibilities of the baroque and classical periods in France. As usual, he is acutely sensitive to the importance of evaluating the changing critical reaction to any author he is discussing, and succeeds in establishing the fragility of the great discontinuities thrown up by the vagaries of the history of criticism.

Indeed, the most remarkable fruits of Professor Simone's work concern a whole series of continuities, between the Middle Ages and the Renaissance, the Renaissance and the seventeenth century, the baroque and the classical, the age of Gerson and that of Fichet and Gaguin, between the *rhétoriqueurs* and the *Pléiade*, the baroque poets and the classical dramatists, Budé and Bodin.

The same method reveals how the French Renaissance went further than the earlier Italian one. Other scholars, an Augustin Renaudet or a Marcel Bataillon, have produced more exhaustive documentations of important original theses. But Professor Simone, in this rather like Lucien Febvre, has established a new method and with it a new focus of interest which will be of continuing significance for Renaissance studies and has already borne fruit in the work of younger scholars.

Not surprisingly, however, the concentration on attitudes to history both sacrifices in comprehensiveness of definition what it gains in sharpness and leads away from purely literary preoccupations. Not that Professor Simone ever reduces literary explorations of imaginative experience to abstract formulations of values or ideas. But his real interest lies in the relationship of sensibility to its cultural setting rather than to its great individual literary expressions.

Umanesimo, Rinascimento, Barocco in Francia, which consists of seventeen occasional papers and a semi-autobiographical preface, contains no radically new conclusions. Some French authors are quoted in Italian, and comparatively few of the papers carry an apparatus of notes and references. The emphasis on continuity leads to the disconcerting neglect of some established discontinuities, such as the break between the Latin, Ciceronian and reformed humanism of most French authors before 1550 and the Greek, Erasmian, counter-reformatory humanism of Ronsard and Baïf, or that between those authors who worked towards the subsuming of dialectic into rhetoric and those who, in the French style adopted by Pico della Mirandola, continued to be unconcerned about the union of philosophy and eloquence.

Of the dates of these papers, we are told only that they stretch from 1947 to 1965. A good deal in them needs modification in the light of what has been published, especially in English, over the past twenty years. The history of the religious upheaval has been largely rewritten in that period, while much more major work on the Renaissance has appeared in America and England, often emanating from Harvard or the Warburg Institute. Professor Simone largely disregards the religious issue and either wrote before or neglects important sections of the other literature. After the work of Bohatec in German, his treatment of Budé is particularly weak, and it ought to be noted that the anti-Italian strain in French humanism had exploited the continuity between Athens and Paris, against that between ancient and modern Rome, before the end of the fifteenth century.

It is in the light of the major recent studies, and on account of his comparative neglect of religious history, that it is necessary in the end to say that Professor Simone has often failed to identify the imaginative constraints acting on the authors he treats, as he has failed to penetrate beyond the changing attitudes to history which he exploits to the value-shifts which determined them.

But there is perhaps necessarily some pathos in the publication of collected papers which a great scholar has written over a long period. Professor Simone has made an important and influential contribution to the study of his own field, and beyond it to literary studies generally. Where his conclusions have been overtaken, it is sometimes by scholars who have learnt from him. The present volume, while not his greatest book, may well prove the best introduction to his thought and method, if only because of the fascinating preface and the range of its subjects. For all the flaws, it is an important book. It could become a minor critical classic.