

ROGER BACON THE PHILOSOPHER.

1214-1294; 1214-1914.

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HISTORY works many wonders; none, however, more striking than that, again and again exemplified, of the discovery, resurrection, and transfiguration of the forerunner. Doubtless, some day, when America shall at last have produced her great philosophers, a real and really dramatic history of American philosophy will come to be written and the relatively small and insignificant thinkers of past and present, although perhaps long forgotten and never greatly celebrated, may become immortal as forerunners. Think what Socrates, Plato and Aristotle did for the historic line of the pre-Socratic philosophers beginning with Thales or—possibly not so remarkably—what Kant and Hegel did for their forerunners beginning with Descartes. And, to come to the subject of this essay, think what Lord Bacon of the seventeenth century and the natural science whose method he has had the fame of first clearly formulating, did for Roger Bacon of the thirteenth. Can it be that resurrection rather than burial is a law of history?

But there is, of course, a different side to the whole matter, not necessarily flattering to him or those who have followed. In the history of philosophy, as in all history, any day or generation is constantly being found to have, or at least to seem to have, plagiarized from the past. The forerunner, when brought to life and justified by some later thinker, often proves to be, not the dependent or subject, but the master, even robbing the later and widely reputed prophet of his glory. Dr. Jacoby,¹ of the University of Greifswald, lecturing in America a year ago, found most if not all of Bergson in Schopenhauer and with a skill not less success-

¹ See also Günther Jacoby, "Henri Bergson, Pragmatism and Schopenhauer," *The Monist*, Oct. 1912.

ful and scholarly performed certain other similar feats that all but turned familiar history topsy-turvy, making a supposedly dead and ghostly past not merely real and alive but even more real, more vital or at least more original, than the present. Perhaps Greifswald was unwilling that any good thing should rise from the fermentations of Paris, but, again to come to the subject of this essay, of the two Bacons it has been said more than once, not only that the earlier friar was possessed of more insight and originality than the later lord, but also that, while the lord doubtless got his name without benefit of the friar, he nevertheless quietly appropriated many of the other sources of his reputation from his more brilliant as well as more pious forerunner. As to the truth of this charge it must always remain at least a puzzle why there should be so many striking and often almost verbal similarities between the doctrines of the two men: for example between their protests against the authority of the past, of medievalism generally and of the medieval Aristotelianism, between the four idols, or *idola*, of the one and the four *offendicula* of the other: and, not to lengthen the list here, between the prophecy that Francis made of such modern wonders as flying-machines, carriages not drawn by beasts, telephones and submarines and that of the same things proclaimed by Roger more than four hundred years earlier. Perhaps by surreptitiously introducing all those surprising acrostics Francis Bacon did not manage to have written Shakespeare, but he does seem to have been busily writing on passages in the *Opera* of Roger Bacon prenatally by several hundred years. In any case, while resurrection may be one of the laws of history, the later day restoring the earlier, it does seem also as if at least sometimes the past, hearing the great trumpet-call, rose up to the serious if not fatal undoing even of long following generations.

Still, not on the relative greatness or originality of the two Bacons and their different times must I hold my attention or my readers'. Whichever man one decide to make the support of the other, be Roger Bacon the great genius or only the fortunate forerunner, there is good reason for the present interest in him, and my particular contribution to that interest has to do primarily with his philosophy. Of his philosophy, then, I shall speak under three heads: metaphysics; methodology; moral philosophy.

The metaphysics is notable in at least three respects. In the first place, his substance is no mere stuff or material, whether physical or spiritual, of which things are made by being given some form, say the form of stone or tree or the image of God. It is no

mere clay, in itself aimless and lifeless, in the potter's hands. *Mere* material can be no more substantial than *mere* form. In other words substance, *real substance*, can lie only in the union of material and form. So, as I would submit, does the always far-seeing friar say, only in the rather inadequate language of his time, that substance is essentially dynamic or active in its own right or nature, inhering not in the material nor in the idea or form, but in the process by which material takes form or form expresses itself materially or, quite generally, by which universal and particular, being inseparable, work in and through each other. His was thus more a *genuinely* Aristotelian or even a Leibnitzian idea of substance than a scholastic or, to say the least, than a mediævally orthodox one. I have added the alternative, because in the doctrine of substance, as well as in many other doctrines, Roger Bacon's philosophy is an emphatic reminder that the Middle Ages were not so blind nor so bound as they have often appeared to be to the casual view, and in general I wonder if, instead of feeling surprise that in men and in ideas the thirteenth century was often alive with what was "ahead of its times," as the phrase runs, one should not rather expect to find in a civilization that did finally outgrow itself living and notable evidences of the coming change.

But, for the second important aspect of the metaphysics, quite consistently with his idea of substance Bacon holds that mere material can have no integrity of its own. There can be no single something, that is, no material *one*, no one stuff, behind all things; a denial, I think, that is directed quite as strongly against any oneness or singleness or say any homogeneity in the spiritual as in the physical realm; for in his vigorous antipanteism Bacon shows himself opposed both to materialism and to monism as explanation of the spiritual world. In fact he seems to me to be here a very true follower of St. Francis himself in that in his feeling or vision, if not in any of his definite statements, he is become virtually indifferent to the differences of the traditional dualism. For him, integrity no longer dwelling in the mere stuff of things, what does it signify whether things belong materially to one realm or the other? Spiritually or physically the material of things is plural, not singular; many, not one. *Quantæ res, tantæ materiae*. A harder and more destructive blow to the dualist's traditional stuffs, merely of which individuals are made, would be difficult to conceive.

And, thirdly, Bacon the metaphysician, regarding substance as in the union of material and form and insisting that no mere material can have any unity, proceeds to a very logical conclusion,

namely, to the assertion of the prior reality of individuals in the world. Universals have no real existence. Whatever claim universals may have to recognition can lie only in the resemblances of individuals. Our metaphysician was thus nominalistic, and in his nominalism, however uncertain and inarticulate it may seem when compared with that of the fifteenth and sixteenth centuries, we have one more evidence of his timely originality and precocity and a door, set well ajar, by which we may pass from his metaphysics to his methodology. With the subordination of the one to the many, of universals to individuals, appear appreciation and advocacy, theoretical and practical, of induction and experiment. Others must tell how much or how little was actually accomplished through these methods. I am to consider here only Roger Bacon's sense for method, and in using this phrase I mean to indicate in a rough way to what extent he may be called a methodologist.

In any reflections on Bacon's sense for method one needs to give very special regard to the times in which Bacon lived. The sophistication that underlies any adequate appreciation of method as method, any clearly conscious and well-controlled adaptation of means to end, can hardly be said to have constituted a conspicuous and pronounced factor in the atmosphere of the thirteenth century. Nor in the cause of the natural genius and timely precocity of that century do we need to look for such mature sophistication. Neither church nor state, neither industry nor social life had reached the deliberation and finesse which that would demand. Machiavelli or at least Machiavellism—for there may be some physiologist near at hand—was still three centuries unborn. Jesuitry was no older. Industrial organization and social custom were waiting—not yet very restlessly—for the Renaissance to make them, first humanistically awake, self-conscious, zestful, and then, as man, conscious of his own worth, should come to demand liberation from all confusion and entanglement with the machinery, the mere instruments and methods, of life, even rationalistic, *resorting, as he finally did to reason and nature that he might escape the constraint of his own institutions.* Chemistry was only alchemy. Astronomy was astrology. The ritual of religion was exorcistic. All of which is to say, I think, that in general the method or the formal organization by which a society trains or educates its members to a sense of method was not yet abstracted and dehumanized. In every department of life society was organized in the spirit of militarism that directly exploited men, their physical strength, their personal hopes

and fears, their wants, their habits, their immediate attitudes and ideas, for all the interests and purposes of life. Human life, physical, mental and spiritual, was still both end and means. Of course for man thus to be using his own nature, all its various forces and resources, for development of himself, was to be exhibiting an inefficiency—suggestive almost of the futility of trying to lift oneself by one's boot-straps—that must even provoke a smile in these very modern days of efficiency, but whether in physical or in mental activities, that military way of exploiting human nature, of treating it as both end and means, had at least the value of being educative. Just by being treated in his own person as a corporate part of the method and machinery of life, man acquired, let me say, as the natural outcome of his discipline, the power of himself at once freely and in our modern sense efficiently using method and machinery. He was educated to use for his own purposes forces and resources that were natural rather than human, objective rather than subjective, mechanical and physical rather than military and human. He was made no longer a soldier, but a mechanic; no longer a compliant believer, but a logical thinker; no longer a mere slavish ritualist in any field, but an investigator and experimenter. And so, if the Renaissance be noteworthy as peculiarly the transition period of such a development, Roger Bacon's century can hardly be expected to have produced more than a prophet of it. His own sense for method was indeed no uncertain sign of what was to come, but such ideas as he had are not worked out in those details that insure effectiveness. He, or his methodology, such as it was, only shows that the education of the medieval organization of society was beginning to produce substantial results.

Perhaps it is far-fetched to attach any great importance to the fact that Bacon belonged to one of those orders that must always be thought of as valuable forerunners of Protestantism and that in this character showed a strong disposition, by using the church and its officers rather than being used by them, to turn the existing organization of life into an external means to life instead of continuing to confuse it with the end of life. Also it may be unwise even to make much of Bacon's English extraction. Some importance, however, must belong both to the Franciscan connection and the English extraction, although without them a man very much like our English Franciscan must soon have appeared. The medieval system had already passed the era of its greatest formal successes and for any system this era must soon be followed

by the change, already indicated here, but now somewhat differently described, from the system's institutional and dogmatic period to its instrumental and experimental period. Of just this change Bacon's methodology is a sign or, if the metaphor be not too violent, an alembic; and with it, as must now be pointed out carefully, there came also the generalization or the opening of the view that the experimental use of anything in distinction from a use so self-centered as hardly to constitute use at all, or that induction, in distinction from deduction, must always bring. Deduction, for example, is naturally committed to some fixed and special system or law; it is monarchical and institutional. But induction is bound only to a general lawfulness, to an open principle of law in things, being democratic and experimental.

But now I would go even further than suggesting as above I have suggested, that Bacon's appreciation of experiment and induction were products of the medieval system and its educative influences. On one factor of method, as he conceived it, I have not yet touched. To induction and experiment Bacon added mathematics, in his appreciation of this far excelling his follower of the same name and possibly excelling, too, even his own appreciation of experiment and induction. Was the sense for mathematics also in the atmosphere of his century? Was it also an outcome of the medieval organization of society? I have to believe that it was. Possibly, from what has been said already the grounds of this belief will be easily surmised, but mathematics or mathematicalism seems to me very like a liberated legalism or institutionalism. It is a spiritualized and dehumanized, a universalized and objectified legalism. Thus, again, the spirit of legalism with its tests of formal consistency belongs to mathematics in the very highest degree, but in mathematics that spirit has been freed, first, from any one given system or regime, the "given" in any instance always having the character of only one among indefinite other hypotheses, and, second, from human interest and bias, qualitative differences being lost in homogeneity and valuations being all quantitative and being controlled by standardized methods and instruments. An institutional life, then, like that of the medieval church and state, as it passed from an institutional to an experimental and instrumental character, was bound to produce, at least among the more responsive and appreciative members of its personnel, not merely the wider view of experiment and induction, but also the freedom of the mathematical way of reasoning; and Roger Bacon, at once Eng-

lishman and Franciscan, was certainly one of the most responsive and appreciative spirits of his time.

For the rest, it is important to keep in mind that, like all else in his philosophy, Bacon's sense for science and its method was more vision than clear and full understanding. He saw much afar off, but, as said here already, in formulating the details of what he saw and in effective and productive application he was lacking. A significant side-light on his methodology is afforded by his sensitiveness to the deficiencies in the scholarship of his time. Not only in the sciences would he have a methodical study of nature, but also in the humanities, notably in the languages and literatures, he would have men go carefully and methodically to the sources instead of using most untrustworthy translations then still in vogue. In his methodology, finally, Bacon was a thinker or seer beyond his times or beyond what appears as the vogue or the surface of them. A stick, however, drawn from the water, must still drip, and in view of this truth, interesting and fascinating to the observer in many ways, it is refreshing and reassuring to find that with all his anticipations of the modern standpoint Bacon was still of his own century, not now because every century of a growing civilization must have its prophets and forerunners, but because he actually mingled the magic of his day with his method, the blind and extravagant expectation with his rationalism. The languages, notably Hebrew, were to be mastered in a few days; the sciences in a few weeks. The Berlitz Method for the languages, "while you wait," and Steele's *Physics in Fourteen Weeks*,—if I have the title right,—are but a far cry from Roger's splendid dreams.

Thirdly and lastly, there is the moral philosophy to be considered. In this, as might be expected, progressivism being always peculiarly reluctant in matters of religion and morality, Bacon is disappointing. At least he is disappointing at first sight. Thus for him moral philosophy is neither more nor less than theology. Science and reason are handmaids of the church. Although such empirical generalizations as he makes in the field of morals are often interesting and show perhaps more than ordinary insight, ecclesiastical tradition appears as a strong bias in them all. So, whatever be true of Bacon the metaphysician and methodologist, Bacon the moral philosopher seems more the medieval friar than the seer and thinker. But he is indeed a poor friar who is not more than his gown, and Bacon proves to be in reality much more even in his moral philosophy. Thus for him moral philosophy or theology is no discipline by itself, aloof and wholly independent;

it is neither more nor less than the crowning science. The term "sacred" he applies not merely to theology but to other sciences, like geography and geometry, and with a meaning that no ordinary theologian of his time could ever intend. Science and reason are for him truly handmaids of the church, but he is also at least near to regarding them as in a *necessary* attendance upon the church and its faith, and, plainly, if indispensable to the church, they have a certain independence. Indeed Bacon sometimes concedes to them a worth quite their own. "We have now considered," he says, at the beginning of the *Opus majus*, "philology, mathematics and experimental science and have observed both their intrinsic importance and their value to the church." With this introduction he proceeds to his moral philosophy or theology, which, as turns out, he would have based on a synthesis—marvelous to contemplate and showing the friar in a large rôle and in danger, too, of an un-Christian if not unholy enthusiasm—of the Mosaic law, Christian revelation, pagan philosophy, and natural science. Frequently he quotes Aristotle, Plato, Cicero and Seneca.

So, after all, Roger Bacon, the forerunner and seer, was by no means altogether lacking in his moral philosophy.

In closing, I would say of Bacon's doctrines at large, of his life and thought as a whole, that such a man of genuine vision and enthusiasm, a man not too successful in understanding himself and in formulating his ideas for others, has an importance that in our own time may easily be underestimated. Also, after finding him and getting knowledge of him, historians must gain new interest and confidence in their studies from the fact that the clear seeing, the rationalism and the mechanicalism, the experimental science and the mathematics of the seventeenth and eighteenth centuries, not to speak of later times and standpoints, had such a worthy forerunner as early as the thirteenth. Without such prophets as Bacon, without such men, able to distill the future from the past, history would surely be a dull and futile science.