1941

Biology at the College of William and Mary before the War Between the States

Donald W. Davis
Virginia Fisheries Laboratory

VIRGINIA FISHERIES LABORATORY AND DEPARTMENT OF BIOLOGY,
COLLEGE OF WILLIAM AND MARY

CONTRIBUTION No. 3

BIOLOGY AT THE COLLEGE OF WILLIAM & MARY BEFORE THE WAR BETWEEN THE STATES

DONALD W. DAVIS

Reprinted from THE VIRGINIA JOURNAL OF SCIENCE,
Vol. 2, Nos. 2 & 3, 1941.

Biology at William and Mary Before the War Between the States

BY

DONALD W. DAVIS

College of William and Mary, Williamsburg, Virginia

Like nearly all of the current subjects of instruction at the College of William and Mary, Biology naturally traces back into departments under other names. Meager as must have been the teaching during the early years in any of the fields specifically mentioned in the Charter granted in 1693 by the British sovereigns, certainly some matter within our present field was contemplated in the listing of objects mentioned in the preamble of the Charter: " . . . to the end . . . that the youth may be piously educated in good letters and manners . . . to make, found and establish a certain place of universal study, or perpetual College of Divinity, Philosophy, Languages and other good Arts and Sciences . . ." It is safe to say that none of those subjects in the conception of Commissary Blair, who doubtless prescribed them, would have been defined in terms that would at all fit with the boundaries of present departments. For any fair view of the teachings of those days, one must go back of the titles of the chairs established and of the courses that may be listed, remembering that the terms, Natural Philosophy, Natural Science, and Chemistry were by no means so restricted in meaning as they have since become, and that Science signified knowledge or learning rather than the particular body of knowledge that the word means today. A letter, illuminating on the point, was written in 1802 by "an inhabitant of Williamsburg" to the Editor of the *New York Evening Post* to protest errors contained in "two short paragraphs (of that paper) respecting the College of William and Mary." One item of the correspondent's indictment is as follows: "9. Instead of the desertion of science, in the College of William and Mary, it is submitted, whether mathematics, natural philosophy, astronomy, ethics, law of nations, politics, civil law, deserve to be ranked, in the estimation of the learned editor, among the sciences." We must not allow unaccustomed terms to lead us to neglect any indications of biological elements in the courses of study of the early days.

In the Philosophical School, which with the Grammar School and the Divinity School made up the early College, the first chair was that of Natural Philosophy and Mathematics. Established in 1712, it is from this chair that any instruction in sciences should be expected. Its first six occupants have left little record of the

scope of their teachings or of the fields of their activity. It should be remembered, however, that the half century covered by their service immediately followed a period of brilliant progress in biology marked by the work in microscopy of the Englishmen, Hooke and Grew, of the Italian Malpighi, and of the Dutchmen, Swammerdam and Leeuwenhoek. The English preceptors and former associates of our academic predecessors were quite familiar with the work of these men. Of those named, not themselves English, Malpighi had many brief papers published by the Royal Society of London which honored him with election to membership and preserved the portrait he presented; and the letters in which Leeuwenhoek recorded his observations were largely addressed to the Royal Society which, also, received from him a gift of twenty-six microscopes each fitted to an object for examination. The years preceding the opening of our Philosophical School also saw important work on classification of plants and animals by the founder of modern natural history, John Ray, whose "The Wisdom of God manifested in the Works of Creation" could scarcely have been unknown to the philosophical and reverend occupants of William and Mary's Chair of Natural Philosophy and Mathematics. Thus, it is reasonable to suppose that some of the biological science of their day was included in the teaching of these men.

The seventh occupant of our chair, 1758-64, was William Small, the first notable scientist of the faculty, of whom his pupil Thomas Jefferson wrote " . . . he fixed the destinies of my life." Small came at the time of the rise of the great Swedish naturalist, Linnaeus, who already had achieved wide recognition. Twenty years earlier, Linnaeus, arriving in Paris and going unannounced to the Garden of Plants, attended a demonstration by Bernard de Jussieu. Observing the demonstrator to be puzzled over a particular plant, the stranger remarked, "It has the appearance of an American Plant." Whereupon de Jussieu exclaimed, "You are Linnaeus." Fifteen years later, Linnaeus published his "Species Plantarum" and, in the very year of Small's appointment, his "Systema Naturae." Contacts between Virginia's naturalists and Linnaeus or his associates had been established even before the publication of these notable landmarks in the orderly classification of plants and animals. It may well be, therefore, that Small influenced the young Jefferson specifically toward the botanical studies which constituted no small part of his repertoire of intellectual and practical interests.

We have the testimony referred to above as to the greatness of Small's teaching and we have reason to believe that he introduced the lecture system into American education, but as to the subject matter with which he dealt we know little. Isaac A. Coles, writing in 1779 to Henry St. George Tucker, says: "The study of

the natural sciences and experimental philosophy was introduced at William and Mary by Dr. Small of Birmingham, England. Gov. Fauquier was an ardent devotee and in his will left his body for scientific purposes. Jefferson was brought up under his influence, and even James Madison, the Bishop, imbibed the spirit. Natural Philosophy was his favorite study." Notable in the record of Small's service is the list of apparatus purchased for the College after his return to England in 1764. The day was not one of extensive equipment for biological studies but this list includes at least one item whose chief service, then as now, has been biological, "a best double microscope etc." Indicative of such use is one of its earliest names, "vitrum pulicare" or "flea-glass." Similar instruments are still used in a demonstration which doubtless has had a very long, if devious, history, the flea circus of our fairs. Coles' reference to Dr. Small of Birmingham, Eng., calls attention to the fact that in his later years our erstwhile professor was a famous Birmingham physician and close friend of the physician and philosophical naturalist, Erasmus Darwin, and of the inventor of the steam engine, James Watt.

In the absence of definite records of the subjects taught at the College under Small and his immediate successors, we must fall back on the interest of the times which, indeed, were not sterile. Dr. John Mitchell, physician and naturalist, living at Urbanna, Middlesex Co., was a fellow of the Royal Society of London and a contributor to its Transactions. He sent data on the American Flora to Linnaeus. He wrote various papers on natural history, an "Essay on the Causes of Different Colors of People in Different Climates" (1744) and "Yellow Fever in Virginia in 1737-42." John Clayton, for over fifty years Clerk of Gloucester County, called by the English botanist, Peter Collinson, "My friend the great botanist of America," corresponded with Linnaeus, Gronovius and other naturalists of Europe and America. Gronovius' "Flora Virginica" which was based largely on specimens sent him by Clayton was printed, in parts, in 1739 and 1743 and in a revised edition in 1762. Two volumes of an illustrated natural history of Virginia, painstakingly accumulated by Clayton and ready for printing, were lost by fire during the Revolution. While we know of no direct associations of Clayton with the College, the John Clayton listed among the Visitors of 1723 being more probably his father, the Attorney-General, a strong suggestion of indirect contacts is found in the fact that, in May, 1773, when the Virginia Society for the Promotion of Useful Knowledge was organized in Williamsburg, John Clayton, then about eighty-eight years old, was elected president. The atmosphere surrounding the College in the last half of the eighteenth Century was not heedless of the scientific, and more specifically of the biological, knowledge of the time.

We have more definite indications that, after Dr. Small, the next Professor of Natural Philosophy of whom we have a noteworthy record introduced some biological subjects in his academic instruction. This was the Reverend James Madison, a graduate of the College, who was appointed in 1773, made President in 1777 and who was also, after 1790, first Episcopal Bishop of Virginia. A sample of his sermons reveals Madison as a broad minded cleric which is, perhaps, another way of saying what one of his pupils wrote of him: "The priest is buried in the philosopher." On June 15, 1774, at the first meeting of the VSPUK (the modern alphabetical type of designation is convenient, if not elegant) following Madison's appointment to the faculty, John Clayton having died, John Page, the vice-president, was made president, George Wythe vice-president and Madison secretary and curator. Madison's interests, largely scientific according to our present classification, certainly did not exclude biological topics.

In 1780 President Madison wrote to President Ezra Stiles of Yale College in response to the latter's request for "any of yr own compositions and printed Theses or Academic Exercises":

> "I have nothing that I think worthy of your Attention by me at present. We have as yet published no Exercises under the new Establishment, tho' we have some young men of real Genius, who promise to become Ornaments of their country. Whenever we do, I will take the Liberty of transmitting them to you.
>
> "As to myself, I have some thoughts of publishing a Course of Lectures upon that Part of Natural History wc relates to Quadrupeds, some Time the ensuing Winter or Spring.—If I shd, I will send them to you, tho' I fear they will be far from deserving your Esteem.
>
> "Shd you think it worth while to continue a Correspondence, which you have so obligingly commenced,—I shd be glad to have some Acct of the Cold the last Winter at your Residence. As it was probably the severest ever experienced, since the settlement of America—and also your usual Summer Heat, together with the Quantity of Rain that falls annually and the most prevailing Winds. Also your Latitude and Longitude—together with the Variation of the Needle.—Facts of this kind will serve to throw great Light upon the Natural History of America."
>
> I am Sir with great Respect,
> Your Most Obedt Servt
> J. MADISON.

A number of items in Madison's letters to Thomas Jefferson testify to interest in varied current problems. In 1785 "We have rec'd a Present of some valuable Books from the King of France. Among others Buffon in duo complete." On March 27, 1786, "In the continuance of the meridan line wch bounds the western extremity of Pennsylvania, marine shells were found on the highest ground between the Ohio and Lake Erie. I have written to Mr. Ellicott, who was concerned in running the line, in order to procure some of them, which I mean to forward to you. I

shall be happy to send them to you, as they will afford you some useful Data, & wd. no doubt be a particular gratification to those who are capable like Buffon of penetrating into ages past." On December 28, 1786, "Having just heard of Mons. Quesnay's Departure for France I have requested the Favr. of him to take charge of the Shells mentioned in a former letter, I thought they wd probably be acceptable to you, especially whilst in Paris where the science of Natural History has so many able Votaries. Mons. Buffon in his celebrated Epoques speaks of shells found in the highest parts of this country, & so do you in your Notes. I will not pretend to controvert the Method you suggest of accounting for their existence, but I have designedly sent a small collection of similar shells, taken from the immense bed wh. you know lies within the vicinity of this place, and indeed traverses the whole country. You will then be enabled to compare them together and see whether their Similarity, or other Properties do not point out an identity of cause in their formation. At all Events you will probably consider them of some Importance in the History of the Earth." In 1789, "I sh'd be much obliged, if in your next letter wch. you may favour me with, you wd. be so good as to inform me, of the best Treatise on Conchology. I wish to see the Nat. Histy of this lower country somewhat inquired into." In connection with certain bones found in North Carolina he proposes (1800) that "the Philos. Society depute one of its members sufficiently interested in Natural History and Chemistry to examine the [Wall?] in North Carolina, of which no doubt, you have often heard." In 1805 he reports the finding of bones and stomach of a "Mammoth" and the conclusion that these animals were vegetable feeders.

A further token of President Madison's respect for natural history in education is given in his letter written in 1811 to C. S. Todd, a former student at William and Mary then attending a famous law school in Litchfield, Connecticut, and later (1841) Minister to Russia: "I hope you do not confine yourself to law, but take a wide range in belles lettres, history, and the best writers in natural law. There are some excellent natural philosophers, most probably, in your vicinity. Chemistry and natural history should form a principal portion of the study of young men of capacity."

In view of the relations between the two men it was natural that, in 1777, Madison, newly made president, should have entered sympathetically into the plans of Jefferson, then Governor of the State and a member of the Board of Visitors, to transform the College into a university. The story of the reordering of the academic functions has often been told. Jefferson contemplated considerable expansion. Relative to scientific fields he explains, "In natural philosophy I mean to include chemistry and agri-

culture, and in natural history to include Botany, as well as other branches of those Departments." The chief changes actually instituted in these fields seem to have been the formal addition of Natural History to the scope of the chair of Natural Philosophy, occupied by the President, and the institution of a chair of Anatomy, Medicine and Chemistry. To the latter chair was appointed a physician then practicing in Williamsburg, Dr. James McClurg.

Son of a wealthy physician of Elizabeth County who served as surgeon in the Virginia State Navy in the Revolution, McClurg had studied at William and Mary, had gone to the University of Edinburgh where he studied medicine and had returned to settle down in the capital of Virginia. His name was carried on the Masonic Roll in Williamsburg beginning in 1774. In 1776 he had sought Jefferson's influence to secure an "appointment as Physician to Continental Troops in this colony." He occupied his chair, the second chair of medicine in the United States, from 1779 to 1784, but of his teaching and of his pupils we have little definite knowledge. Though Jefferson recognized Botany as a division of Natural History, certain phases of it, generally associated with Materia Medica in the medical studies, were doubtless included in the scope of the chair of medicine. Leaving the college in 1784 to take up medical practice at the new seat of government in the growing city of Richmond, McClurg was an outstanding physician there for forty years. He was sent as a delegate to the Constitutional Convention in 1787 but did not sign the document the Convention adopted. In that same year, when John Page wrote to Jefferson urging him to accept the presidency of the VSPUK, the latter replied that he "should feel himself out of his true place to stand before McClurg." Several papers, including an "Essay on the Human Bile," said to be "so original and instructive that it was translated into the language of every European nation," were published by McClurg. The 1820 volume of the Philadelphia Journal of Medical and Physical Sciences was dedicated to "The Elegant Scholar and Accomplished Physician, Dr. McClurg." The inscription on his tombstone in St. John's Churchyard, Richmond, accords him the highest rank in his profession.

In the earliest years of the nineteenth century the biological teachings of President Madison were, very appropriately, extended by an amateur naturalist, Dr. Louis Hue Girardin, who occupied the Chair of Modern Languages but who conducted a class in Natural History. *The Richmond Enquirer* of October 24, 1806, under the date at Williamsburg, October 21, carried this notice: "During the present term at Wm. and Mary College, Professor Girardin will continue to lecture on Natural history. . . . The want of a museum naturae, Botanic garden, etc. has been ob-

jected to by some. Unquestionably such splendid institutions are in a high degree subservient to the diffusion and progress of natural knowledge. . . . A succedaneum not entirely inadequate may be found in plates, herbals, etc. and, (which is better than artificial assistance of description), the immense book of nature is everywhere, and at all times, open before the eyes of the inquisitive. For the study of animal and vegetable anatomy and physiology, and, in general, of what is termed "the Philosophy of Natural History," indigenous specimens are fully sufficient. Within a few miles, plants may be found to illustrate not only all Classes of the Linnaean system, and most of the orders, but also many interesting, elegant, and useful genera, with some of their most valuable species. In the number, beauty, and usefulness of her vegetable productions, Virginia yields to few tracts of country of the same extent. Of this a single glance over the joint labors of Clayton and Gronovius, the pages of Michaux, Barton, etc., or a few rambles through our woods, fields and meadows, may convince any person in the least degree acquainted with the subject." Michaux, a pupil of Bernard de Jussieu, had been sent by the French Government to study the forest trees of North America, to report on their utility in naval construction and their suitability for introduction into France. He arrived in New York in 1785, was in Charleston, S. C., in 1787 and in 1796 and, meanwhile, had explored widely. He is said to have shipped 60,000 trees to France. His son, born in 1770, was also a traveller and silviculturist but it is probably the father to whom Girardin refers. Benjamin Smith Barton was a physician and naturalist of Pennsylvania who studied medicine in Philadelphia, London and Goettingen and later practiced and taught medicine in Philadelphia. The references to these naturalists and to Clayton and Gronovius testify to Girardin's familiarity with botanical work both here and abroad, and his interest in the local flora is apparent from his advertisement. Contemporary recognition of Girardin's concern with Natural History is given by Joseph C. Cabell, a graduate of the College who had spent the years 1803-6 in Europe and, in the course of his stay, had attended lectures by noted men in the Natural Sciences and had made some collections of objects of scientific interest. He wrote to Thomas Jefferson under the date of July 23, 1810, as follows: "Since my return, I have become involved in the usual pursuits of Virginians, and my mind has been totally abstracted from Natural History . . . not wishing to act the part of the dog in the manger, I lent my cabinet of minerals to William and Mary College, and my herbarium to Mr. Girardin, not long after I got back to Virginia." A copy in oils made by a graduate of the College from a portrait of Girardin is now a prized possession of the Department of Biology.

The next teacher, notable in our records for his teaching in the sciences, was Patrick Kerr Rogers who occupied the chair of Natural Philosophy and Chemistry from 1819 to 1828. A graduate of medicine from the University of Pennsylvania in 1802, an accomplished scholar, author during his service at the College of "An Introduction to the Mathematical Principles of Natural Philosophy" and a popular and impressive teacher, his greatest success was in the raising of four illustrious sons all of whom became eminent college and university teachers, and all except William Barton served at one time or another at the University of Pennsylvania as their father had done before coming to William and Mary. One, Henry Darwin Rogers, was finally called from a professorship at the University of Pennsylvania to a similar post at the University of Glasgow. There is abundant evidence that it was not solely by inheritance that the father influenced his sons and that his other pupils shared in the profit of his instruction. Of the topics covered in the teachings of Dr. Patrick Kerr Rogers rather little is known, but one may assume that he would not have neglected entirely those phases of science with which, as a medical man of the day, he must have been familiar. His academic successor was his son and pupil, William Barton Rogers, whose sole experience as a college or university student appears to have been at William and Mary during his father's professorship. William Barton Rogers was of the type of individual that, once initiated into the scholarly life, finds its own means of developing that life to its utmost. Patrick Kerr Rogers and his associates at William and Mary surely provided for him that initiation. Unseeking of personal renown, academic advancement or honors, William Barton Rogers had conferred upon him the degree of LL.D. by Hampden-Sydney College in 1848, by his Alma Mater in 1857 and by Harvard in 1866. As Professor of Natural Philosophy, the younger Rogers included in the junior chemical course (catalog of 1829-30) the "Elements of Botany." With his intense and abiding interest in Physical Geography and Geology, he surely must have interested himself and his pupils in the abundant fossils of the Peninsula and in their interpretation.

A letter written by Rogers at Boston, April 4, 1859, is of such historical significance from both a sentimental and biological point of view that extracts may fittingly be cited: " . . . With him [Littleton Waller] and his lady friends I made a good collection at his fine marl bank the next (Sunday) morning, and after dinner was driven in a buggy to dear old Williamsburg. To my great delight I found all along the road proofs of prosperous and improved agriculture. The old "Burnt-ornery", as the negroes used to call the ruinous charred inn, is now replaced by a hamlet of neat white houses, and on all sides I saw evidences of

neatness and thrift. But sad was the sight when about sundown I came in view of the college, as I approached by the road leading past the president's house. Many of the old trees on the roadside greeted me as familiar friends, but I missed the sharp, many windowed roof of the college, and found as I drew near, that although the solid walls had for the most part, defied the assault of the fire, the whole interior of the wings, as well as main structure, had been turned to ashes.

"I drove past, with a tearful eye, noting that the mossy coat of old Botetourt was unscathed, that the dial kept its place, that the president's house and our home, the Brafferton, had not been injured, and that one of those noble live-oaks at the gate was dead."

The reference by Rogers to improved agriculture on the Peninsula reflects the work of Edmund Ruffin who was educated at the College within the first two decades of the century and who was, at least between 1833 and 1845, a member of the Board of Visitors. He is recorded as Rector of the Board in 1836-37. By his study of scientific farming and his stirring editorship of the *Farmer's Register,* Ruffin so encouraged extensive use of marl in counteracting soil acidity, drainage of excessively moist lands, rotation of crops and the introduction of legumes into the crop cycle that from a period of decline of agriculture and depopulation on the Peninsula in the first third of the century there resulted in the years from 1835 to the War Between the States the marked improvement that Rogers joyously recognized. The alert scientists and engineers of the college faculty in these years could not have been oblivious to such changes or unconcerned with them in their teaching of chemistry or natural history.

Nor could such change have gone unrecognized by the man who followed in 1836, after Rogers had accepted the directorship of the incipient Geological Survey of Virginia and the Professorship of Natural Philosophy and Geology at the University of Virginia. This was John Millington, M.D., who had lectured for many years at the Royal Institution and, as professor of chemistry, at Guy's Hospital in London. He had served as superintendent of some British mines and of a mint in Mexico. Before coming to William and Mary he conducted an instrument shop in Philadelphia, an early example of the great American supply houses which now offer scientific equipment in such abundant variety to those who may be able to buy. This last experience must have contributed to his dissatisfaction with the remnants of the ancient equipment purchased in 1764 by William Small and of the improvisations of William Barton Rogers, which he found upon his arrival at Williamsburg; and the same experience; it is to be hoped, made it possible for him to indulge a very general inclination among teachers of sciences in adding $36,000 of

his own to the meager appropriations of the College for scientific apparatus. Millington made for the College a collection including geological specimens (fossils?) and materia medica.

According to the College Catalogs, Millington offered extended instruction in medical sciences at least from 1840 to 1846. As specifically laid out in the catalogs of the early 1840's the subjects treated were "anatomy, physiology, materia medica, anatomy of the nerves and organs of sense, pathology, and therapeutics, operations of surgery." The announcement of the courses makes clear that this was not planned as the equivalent of a course in a school of medicine but rather a substitute for the period of apprenticeship that commonly occupied a portion of the period of medical training. Tyler, in his study of "The Medical Men of Virginia," points out that, from a state of dependence in early colonial times upon apprenticeship as the sole form of medical training, "The number of University graduates increased till, by the time the American Revolution was fairly under way, the tone of the profession was largely dominated by them." Still, in a Virginia statue of 1736, it was enacted that no surgeon or apothecary who had served an apprenticeship to those trades should charge more than certain prescribed rates whereas those who had taken a medical degree at a university might collect double the aforesaid charges.

In the Catalog of 1845-6 private instruction only was offered in the medical subjects previously described without that limitation. It is difficult to judge whether this signifies a change in policy or a mere clarification as to a practice already in vogue. The registers of students in 1843-4 and 1844-5 specify the courses of the registrants as "Junior," "Senior," "Junior & Senior," "Senior, Med.," "Chem.," "Math," "Private Law," "Law & Gov. History," "Entire Junior," "Chemical and Medical," "Senior & Law," "all the Classics," "Regular Senior," "Prep L. & Gr. & S. P." Five men are thus listed as being under medical instruction in 1843-4 and four in 1844-5. In any case the boundary between private and official instruction was far less precise than one might suppose. Indeed the fee paid to an instructor by each regular scholar was two-thirds of that paid by a private student. The limitation of medical instruction to private arrangement does not denote any antagonism to the subject. Law was also offered privately and advertised in the Catalog to the extent of five hours a day five days a week! It is difficult to imagine how, with any such program, Millington could carry on classes in chemistry, natural philosophy and engineering; but perhaps his text book of seven hundred pages in the last-named subject, published in 1839, may have relieved somewhat the burden of preparing lectures and freed some time for a return to topics of his early studies.

In 1849 Dr. Millington declined the customary annual reelection to accept an appointment as professor of chemistry in the University of Mississippi. In the previous year Benjamin Stoddert Ewell had been appointed to the Professorship of Natural Philosophy and Mathematics and now William F. Hopkins was chosen to succeed Millington as Professor of Natural Philosophy and Chemistry.

It seems that during Hopkins' short stay he taught chemistry and divided Natural Philosophy with Ewell who probably continued the instruction in engineering introduced by Millington. Ewell was a graduate of the United States Military Academy and had been an instructor there, had seen service as a railroad engineer and had been professor of mathematics at Hampden-Sydney College and professor of mathematics and military science at Washington College (Washington and Lee University). From 1849 to 1861, except for the brief period of Hopkins' occupancy of the Chair of Chemistry, he was the only embodiment on the faculty of any interest in scientific matters. In 1848 and from 1854 until the outbreak of the War Between the States, he was not only professor but president as well. Under these circumstances it is not to be supposed that he would foster any of the biological interest that may have been stirred by Millington, Rogers and their predecessors, but the scanty records of the College in these years give little basis for a judgment. The burning of the Wren Building in 1859, already alluded to, may have destroyed some evidence of activities that would interest us in this connection as well as much that would have thrown light on earlier periods. Recorded recollections of the students of that day have dealt more with personalities and places than with the subjects of study. The events of the strenuous following years left in the minds of the pupils little specific impression of the studies they pursued.

It would probably be a mistake to conclude from this history either that there had been little of biological matter presented to the students at William and Mary in its first one hundred and fifty years or that the instruction offered was pedantic and ineffectual. Our records are pitifully meager. Of only a few of the men known to have taught scientific subjects have we any dependable information. We find these to be observant and thoughtful men in touch with the past and with their own times. That little is known of the others may not be due to any deficiency in their knowledge of the biology current in their day or to any lack of vitality in their teaching. To them may be fittingly applicable the famous peroration of Henry Van Dyke at the dedication of the Phi Beta Kappa Memorial Building at the College on November 27, 1926:

"I Sing the Praise of the Unknown Teacher."

"Great generals win campaigns, but it is the Unknown Soldier who wins the war.

"Famous educators plan new systems of pedagogy, but it is the Unknown Teacher who delivers and guides the young. He lives in obscurity and contends with hardship. For him no trumpets blare, no chariots wait, no golden decorations are decreed. He keeps the watch along the borders of darkness and leads the attack on the trenches of ignorance and folly. Patient in his daily duty, he strives to conquer the evil powers which are the enemies of youth. He awakens sleeping spirits. He quickens the indolent, encourages the eager, and steadies the unstable. He communicates his own joy in learning and shares with boys and girls the best treasures of his mind. He lights many candles which in later years will shine back to cheer him. This is his reward.

"Knowledge may be gained from books; but the love of knowledge is transmitted only by personal contact. No one has deserved better of the Republic than the Unknown Teacher. No one is more worth to be enrolled in a democratic aristocracy—

"King of himself and servant of mankind."

Note:—Material for this article has been secured almost entirely from the rich archives of the Library of the College of William and Mary. The labor of becoming acquainted with much of this material has been greatly lightened by the indices prepared by the Librarian of the College, Earl G. Swem. These include the *Virginia Historical Index* and *An Analysis of Ruffin's Farmers' Register* (Bull. of the Virginia State Library XI 3,4; July, October, 1918). Galen W. Ewing's *Early Science Teaching at William and Mary* (Journal of Chemical Education XV 1, January, 1938) has provided a most helpful outline.