

erals continues to decrease, the State must begin to develop its other mineral resources. To do this a complete inventory of all the minerals of the State must be made. It is known that Oklahoma has large quantities of limestone, gypsum, bentonite, tripoli, glass sand, volcanic ash, and numerous other minerals. To have a complete inventory of all the minerals of the State, however, is not enough. All vary greatly in quality. Limestone in one part of Oklahoma may be very different from limestone in another area. Various types of chemical analyses must be run to determine the exact content so that specific uses can be ascertained. Numerous surveys must be made and areas mapped in detail so that the quality as well as the quantity of minerals available in any particular place is known.

Much of the knowledge of Oklahoma minerals has been developed by the Oklahoma Geological Survey. This organization has made great strides with the well-trained personnel available. However, it is too limited in staff, funds, and facilities to carry on the vast amount of research needed. The information which this organization could supply would do much to aid the industrial development of Oklahoma.

Most of the people in the eastern part of the United States fail to realize that almost one-fourth of Oklahoma is covered with dense timber growth. Many Oklahomans are utterly amazed when they learn that forestry is one of the important industries of the State. There are more different species of trees growing in Oklahoma than grow on all the continent of Europe. When the Choctaws and Cherokees moved to Indian Territory, they found their lands covered with dense stands of oaks, hickory, and pines. At about the turn of the century large lumbering companies moved into the area. The trees of eastern Oklahoma were cut without any attempt at proper utilization or conservation. Some few years ago the State Forestry Division of the Oklahoma Planning and Resources Board was organized. Since then, great progress has been made in solving forest problems.

The State Forestry Division has worked successfully with the lumber companies in reforestation and selective cutting. The Division has developed a nursery, will supply trees to farmers who will use them for conservation purposes, and has reforested many acres of land from which the trees should have never been cut. In spite of the excellent work of this group, many problems remain unsolved. Intensive research into uses for blackjack and post oak should be made. Improvements in species for the

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American Literary Problems of the Early Nineteenth Century

By JOHN PAUL PRITCHARD

Amid the greatly increased interest in America's past which now actuates students of American history and literature, not the least important source of information is the files of old periodicals. Since its beginning, the United States has been prolific of magazines of various sorts. Though the life-expectancy of most of them has been merely a few months or years, each represents an interesting segment of personal opinion supported by whatever weight the publication in which it appeared could carry. Among these periodicals, those dealing with topics of varied public interest enjoyed the better health. Those dealing with literary matters alone seldom outlasted the year in which they were born, and their demise often left an aching void in their editors' purses. The review which treated of varied subjects in fact contributed more to the literary development of the country than the literary magazine could hope to accomplish, for men who picked up a quarterly or monthly to read some discussion in their particular field of interest were often attracted to a literary article which appeared in the same number. And of those attracted, some were infused with a literary interest which they otherwise might never have felt; thus the literary public was extended.

Not all of the reviews were written by Americans, and some few magazines, like the Philadelphia *Analectic* and the early numbers of *Harper's*, were composed chiefly of excerpts from British periodicals or of articles by foreign authors. Although these magazines are of interest as indications of what their editors believed would interest the American reading public, they are of slight value in showing how American reviewers tried to meet the literary problems of the day. This paper will consider the literary topics offered by those periodicals which printed original contributions by American writers. Even of this group, it can only sample a few, for the number of these periodicals was legion.

The subjects to be considered are, first, the problem of an American language; the protection of American literature; what were and should be the characteristics of the new literature; the propriety of writing and reading fiction; and the problems posed by "female authors."

The animosity between the United States and Great Britain, which was glowing when the century began, was fanned into flame by the War of 1812 and became almost a conflagration in the years following. Though its fierceness died down from time to time, its coals were ready to flare throughout the half-century. English reviewers denied to Americans the freedom of the language as sternly as their navy had refused to allow the freedom of the seas. To this hostility, Walter Channing, an early contributor to the *North American Review*, retorted by trying to discredit English as a medium for American expression. If we were to be a nation and produce a genuine national literature, we must have our own language. By using English, we could at best produce a variety of English literature.

In the Babel of the Revolution, which gave us a different moral and political existence, it is for our literature most heartily to be lamented, that we had not found a confusion of tongues. We might to this day have wanted a grammar, and a dictionary; but our descendants would have made for themselves a literature.

Since he saw no way to remedy the situation, he despaired of our ever producing a national literature.

English writers countered by charging that we used a language which was at least not English. Other writers in America produced long lists of so-called American words and attempted with considerable success to prove that each had actually a sound British history behind it. This kind of defense of our vocabulary was carried on during most of the century; as late as the 1880's it formed a staple of James

Russell Lowell's dining-out conversation when he was minister to England.

The problem of English undefiled as American usage had many debaters. Not all Americans were advocates of an American language. Noah Webster was already publishing his "spellers," and his proposals for a dictionary were hotly attacked. The Boston *Monthly Anthology* opposed his proposed reforms and additions to the language, and held out for the language of Dryden and Addison. The Baltimore *Portico* declined to trust any American, much less any New Englander, to dictate principles opposed to those of Samuel Johnson. The *Southern Literary Messenger* developed the charge against Webster:

Dr. Noah Webster would fain have us believe that orthoëpy demands such sounds as *natur*, *featur*, *creatur*. We rejoice that even in Connecticut this barbarism is growing into discredit. The learned Doctor would also improve English so as to write *Savior* for *Saviour*, *Bridegroom* for *Bridegroom*, *Duelist* for *Duellist*, and the like. We humbly crave leave to wait until any one English work can be produced in which these elegancies shall appear. It is an *English*, not an *American* language which we are called upon to nurture and perfect.

The same journal castigated Carlyle for trying to "wrench and twist" words to all kinds of strange uses, and for inability to distinguish freedom from licentiousness in style.

In their attitude toward the language as in other matters, these reviewers were less hidebound than their words seem to imply. There was a spirit of chauvinism abroad in America which outdid even the one-hundred-per-cent American of more recent years in scorn of everything not made in America. By 1830, it was not uncommon to hear popular orators clamoring for complete literary emancipation from transatlantic influences. DeWitt Clinton in 1815 had delivered an address glorifying American literature, and in 1829 Samuel Knapp had contrived to stretch a history of American literature into two volumes. In the light of this blatant isolationism, one can see more clearly the importance of men like Irving and Longfellow, who tried to keep before American eyes the inescapable relation which their culture bore to Europe and its power of further enriching America. In the face of such demagogic clamor, reviewers pretty generally had to adopt what seems at first glance an ultra-conservative attitude.

Many American authors evidently felt that their citizenship entitled them to special handling by the reviewers, and bitterly protested when they failed to receive favors. The Reverend J. S. Buckminster, a

spicy-tongued cleric, bitingly defended the reviewers' course of action:

So little have the writers of our country been accustomed to the rigour of a critical tribunal, that, to secure a comfortable seat in some of our outhouses belonging to the temple of fame, nothing has hitherto been necessary but the resolution to write, and the folly to publish. . . . To point out the faults of a living author, instead of making him grateful, only makes him mad; and he discovers all the fury, which is felt by an antiquated belle, when her little niece unluckily espies a gray hair among the sable honours of her head, and innocently presumes to pull out the intruder.

Richard Henry Dana, Sr., a few years later, seconded Buckminster's assertion of freedom to criticize. He would not wear homespun, however coarse, simply because it was patriotic to do so, but looked at the quality of the garb offered him without caring much whence it came. He felt that the American literary weave would sooner or later compete with the foreign; but he declared that a library made up of exclusively American writing would go very bare of quality in his day.

The quarrel came to a head with the publication of a bitter attack upon things American in the *Edinburgh Review*, in which the writer demanded: who sleeps under an American blanket or reads an American book? Stung perhaps by the implied relation between American books and slumber, the reviewer ironically adopted the merely businesslike attitude with which the English writer credited Americans.

We wish we were able to give him as satisfactory an answer to the one question as to the other; but are sorry that while our blankets are twice as warm, and twice as cheap as the English, we have not yet been able to get a supply of native poetry into the market, at all adapted to the taste of the people, or proportioned to the consumption. But we take great pleasure in assuring our brethren abroad, whose confidence and want of information on American concerns stand, if they will believe us, in most ludicrous contrast, that the literary manufacture and literary profession is looking up among us.

He went into some detail to show the difficulties under which our authors labored, in spite of which their work was improving. He gave detailed information of the educational advancement which was not only training future authors but was expanding the size and quality of the reading public. If this, he concluded, cannot satisfy our British brethren, nothing can.

This article came near the end of the worst outburst of British-American animosity. Many writers repeated Irving's advice in the *Sketch-Book*, that since no Englishmen read American periodicals, fulminations against them were of no service beyond letting off steam. The hard feelings caused by the War of 1812 gradually lessened with time. There were, to be sure, occasional revivals of hostility, notably the stir caused by Dicken's visit to America and his publication of *Martin Chuzzlewit*. By that time, however, American writers were able to adopt a less belligerent attitude. The greater number admitted the truth of some of his remarks, and dismissed the rest with good-natured irony. After 1820, though the unfriendliness to English critics persisted, it was less noticeable in the reviews than other matters.

The keynote of the best criticism in the journals during this half-century was sounded by William Cullen Bryant in the *North American Review* for 1818. Incensed by the fulsome flattery of American authors in a small versified *Essay on American Poetry*, Bryant stated his theme sharply:

The poetical adventurer should be taught that it is only the production of genius, taste, and diligence that can find favour at the bar of criticism—that his writings are not to be applauded merely because they are written by an American, and are not decidedly bad. . . . To show him what we expect of him, it is as necessary to point out the faults of his predecessors, as to commend their excellence.

With this principle as his text, Bryant systematically took to pieces the so-called "greats" of the American literary world. None escaped his censure. Joel Barlow, by

About the Author



Professor Pritchard joined the staff of the Department of English in 1944, coming to the University from Washington and Jefferson College where he had been Professor of Greek and Head of the Department of Classical Languages. His chief scholarly interest has been in the relations between Greek and Latin writers and literary criticism in America. "Lowell and Longinus," *Transactions of the American Philological Association*, LXXVI (1945), is one of his articles in this field; and in 1942 *Duke University Press* published his *Return to the Fountains: Some Classical Sources of American Criticism*. Professor Pritchard served as Chairman of the English Department, 1945-49.

doubling the length of his *Vision of Columbus*, had succeeded in making his poem twice as boring. David Humphreys aimed at nothing above mediocrity, and attained his aim; yet in so doing he gained a respectable position among American literary men. The great hope of America lay in her reading public, which would refuse to accept inferior poetry. Then, the law of literary supply and demand becoming active, America would produce that poetry which only laziness amid her riches could prevent her writing. Bryant was as optimistic of the future American progress in letters as he was caustic in criticising the current level of attainment.

Reviewers naturally devoted much space to consideration of what American literature was and what it ought to be. Among its current characteristics in the early part of the century were a number of traditional ideas, coupled with uncertainty about several other matters: the proper use of models, the right subject, the purpose of literature, and the propriety of the novel as a literary form. About these topics the magazines argued in sometimes wearisome detail, but with extreme seriousness, during the entire period.

A common complaint against the American poets of the early nineteenth century was their subservience to British authors. Many of the writers not only truckled to the foreign world of letters, but each even tried to imitate some one British author. Writers were warned repeatedly that imitation cannot hope to surpass its model and probably will not equal it, that the imitator is more likely to copy mannerisms than merits, and that they should write as Americans. Nevertheless, American Burnses, Cowpers, Byrons, Scotts, Southneys, and later Bulwers and Dickenses plagued the reviewers and readers for decades. From Bryant in 1818 to Lowell in 1848, the critics declaimed against such slavish copying, but improvement was slow. Bryant himself was accused by John Neal in *Blackwood's* of imitating a British poet, and Cooper of writing about American subjects and scenes in an un-American way.

Didacticism and moralizing were matters which also caused a good deal of comment. The Calvinistic background of most Americans, which had developed into a rigidity not envisioned by Calvin himself, led them to look upon literature as the handmaid of theology. The reviewers, who were generally clergymen or lawyers, were biassed by their professions to take a similar position. There were, however, a number of dissenters from this view even be-

fore Poe in his violent attacks upon didacticism brought the question into the open.

To the American reader of the early nineteenth century, literature should not only teach, but should specifically teach a sound morality; and he was likely to be somewhat prudish about its contents. Critics who wished to inculcate any other conception of the purpose in literature had to begin by attacking this prejudice. An early attempt to defend the novels of Henry Fielding, which appeared in the *Portico* for 1817, is one of the ablest expressions of the more liberal attitude. The writer declared that it is not the glowing picture of unchaste action that corrupts the heart, for mothers daily use such means to warn their daughters of evil. He cynically doubted that even an artistic imagination could conjure up a vice unheard of by anyone who had reached maturity. The source of evil is "the impunity of vice, and vulgarity glossed with the charms of beauty and accomplishment, by an infected fancy." (Such evil effects, a later reviewer declared, were produced by Eugene Sue's *Wandering Jew*.) Since Fielding allows his characters to be neither happy nor prosperous as the result of their iniquity, he produces no such ill effect.

But, the embarrassed reader in America might ask, did Fielding have to include these depictions of evil? Could he not have attained his end without them? The reviewer continues:

To this, I answer in the negative; for his design being to convey a knowledge of *human life*, and an insight into the *human heart*, a very essential part of his task, consisted in depicting the bad passions, and by consequence, the evil actions of men; general expressions, or select pictures, on such subjects, are more adapted to the *Pulpit*, than to fictitious history. The introduction of such scenes, therefore, was necessary, not wanton; was useful, not pernicious. To those who maintain, that nothing unchaste would ever be written, we can only oppose the conclusive testimony of the *Sacred Writings*; in which the most obscene, and licentious images abound; and which were indispensably requisite to attain the purpose of the *Jewish* religion, the *first* of which, in point of importance, was *moral reformation*.

Unfortunately for American fiction, this reviewer's manful attempt to defend Fielding failed; and it remained for J. R. Lowell to fight the battle over again sixty years later.

As the preceding quotation indicates, even the most liberal of the earlier reviewers were not yet ready to think of literature as written for entertainment alone. Irving's *Knickerbocker History of New York* received considerable praise in the *Monthly Anthology*; but the reviewer seemed somewhat puzzled by its purpose. Criti-

cism of the novel was directed not so much at its moral purpose as at the method of inculcating the moral. A writer in the Philadelphia *Port Folio* complained that female authors in particular had developed a pattern of "dedicating a certain number of pages in each chapter of their work to a dissertation on one of the moral virtues." No method, he contended, could more surely counteract the very effect which the good ladies desired to produce.

A novel never can succeed, in which the fable merely serves as a vehicle for tedious disquisitions on theoretical ethics, or still more tedious ebullitions of mawkish sentimentality. These essays, considered as essays, may be very good, but unfortunately they are not at all entertaining; and novel readers insist on being amused, in the first place, and merely submit to be instructed in the second. . .

The moral effect may, the writer concluded, be quite other than the moral intended. In Richardson's novels, for example,

the virtuous personages . . . moralize so regularly, so gloomily, so tediously, and so pedantically, that they are not half so attractive as his vicious ones, who thus engage on their side those affections of the mind, which should belong to virtuous characters, and to virtuous characters alone. This, beyond a doubt, was not his intention; but there is not a single individual, who has perused his works, that does not at the bottom of his heart, prefer a Lovelace to a Grandison, though, perhaps, he will not openly acknowledge such a predilection.

The attitude toward the novel here indicated, that it must give instruction by entertainment, is substantially that expressed by Samuel Johnson in the *Rambler* some seventy years earlier.

The prudishness of most American novels was dictated not only by the feminine authorship of many of them, but even more by the feminine majority among their readers. The romantic convention of maidenly innocence which Longfellow expressed in his poem "Maidenhood" was accepted by most of the reviewers. Not by all. A surprisingly unchivalrous Southern reviewer in the 1838 *Southern Literary Messenger*, after pointing out the obliquities in Bulwer's *Falkland*, added:

The writer, by the foregoing strictures, expects not to deter his female readers from a perusal—nay, from frequent perusals of the volume before him. He professes a too intimate knowledge of the female heart and of female curiosity, to presume for a moment, that his reasoning, however cogent, can have any other effect than to enkindle an increased desire to become acquainted with its contents. His sole and engrossing object has been to warn them with the solemn voice of a sibyl, against those sophisms of the author, which a gorgeous imagination has gilded with the heavenly radiance of truth.

Subject of surpassing seriousness to Americans in the 1820's was the proper way in which to use Biblical episodes in literature. This problem, which had vexed Renaissance authors because they did not believe any but Greek and Roman classical subjects fit for literature, reached the Americans in a different form. Believing in the verbal inspiration of the Scriptures, they applied to the entire Bible the curse pronounced at the end of Revelation against those who would add to or take away from the words of the book. Under such circumstances, an author showed considerable hardihood if he ventured to make use of a Biblical story for his plot. There were indeed obvious advantages in the use of such material. It was familiar to the American audience as few other literary themes were, and it was so completely believed as to aid greatly the credibility of any story or play based upon it. Accordingly, in 1825, James A. Hillhouse published *Hadad: A Dramatic Poem*, based upon a familiar episode in the historical books of the Old Testament. To safeguard himself from any charge of impiety, the author prefixed to his poem a defense of the suitability of his theme for dramatic imaginative treatment. With a seriousness that seems inappropriate to-day, he cited theological authority for his use of angels as supernatural machinery, and besought his readers to bear in mind that the peoples of whom he wrote were in their day accustomed to preternatural occurrences and receptive of magic and wizardry. Pope had also used other than the conventional agencies, the Greek and Roman gods, in *The Rape of the Lock*; but Hillhouse evidently felt it inadvisable to mention such a precedent here.

This curious literary exploit, Bryant reviewed at length for the *New-York Review*. After commenting ironically on the extreme conventionality and regularity of its construction, he turned to discussion of the proper way to treat personages of sacred history. First, he warned pious readers against the common error of setting Biblical characters on a more than human level; they must be considered as men like ourselves. Next, he defended Hillhouse for developing fictitious details about them:

It cannot surely be impious to suppose that what we are told of them in scripture is not the whole of their history. We are not forbidden to dwell upon what we may conceive to be their emotions, in the various passages of their lives which are recorded, nor to fancy the particulars of those events which are related only in general terms, nor even to imagine them engaged in adventures of which no account has come down to us. So long as this is done in such a manner as to correspond with what it related of their characters

and actions in holy writ; we cannot see that any thing is done to offend the most delicate conscience.

No doubt the enlightened reader enjoyed the irony of the review as much as the devoutly conservative reader was impressed by its logic. At the same time, both received instruction in the method proper to the use of historical themes in fiction or drama—a topic of considerable interest in that age of historical fiction.

The eighteen hundreds in America opened with traditionalism in control. Innovations were for some years looked at with a hostile eye. In particular, the conservatives were doubtful of the novel and the romance, for, being outside of the classical literary tradition, these were fair objects of suspicion. Fielding, already mentioned, was unacceptable by reason of his supposed indecency. More recently, Matthew Lewis's *The Monk* had given the romance a bad repute. Americans were, however, reading fiction with great eagerness, and the reviewers, deplete it as they might, had to admit that the flood of novels and romances could not be stemmed.

Among the many who attacked all novels as vicious, however, were also witnesses in their defense. One, who wrote in the *Polyanthus* for 1812, was agreeably surprised; for, "anticipating the *self-indulgence* of a comfortable nap, we took up the novel before us, but to our astonishment found that it afforded neither sleep nor slumber to our eyes." It was well told, interesting, and not subversive of sound morality. Another, writing in the *Port Folio* for 1820, came out strongly in defence of the writers of fiction.

We are warm partizans of that degraded and persecuted tribe of authors, who are known by the name of novelists, and think that no writers have contributed more than they have to the amusement and instruction of society. . . . Theologians, historians, moralists, and philosophers, are all animated with the same spirit of hostility; and, however they differ upon other points, are unanimous in conferring the most offensive terms upon these light-hearted children of pleasure and imagination.

Another contributor to the same magazine asserted that "the novels of Scott . . . are to our age, what the writings of Homer and Shakespeare were to theirs." Purists in diction complained loudly of Scott's vocabulary, but he reigned supreme over the field of fiction and probably did more than any other to popularize the new romance and make it respectable. By the 1830's, excepting a few conservative die-hards, most reviewers accepted fiction as a standard form of literature.

Romantic poetry also fared hardly with the early reviewers, who were still governed by eighteenth-century principles of taste and decorum. As a reviewer of Moore's *Lalla Rookh* wrote in the *American Monthly Magazine* for 1817, Scott, Southey, and Moore, in reviving the "exploded taste of the middle ages," were causing a relapse into barbarism. English poetry, which heretofore had been celebrated for its philosophical character and profound moral reflections, was losing the design and delicate art dear to connoisseurs. Coleridge in particular fell foul of the reviewers. In a comment on "Christabel" and "Kubla Khan," the readers were told:

It is time for the professed guardians of morals and arbiters of taste, to interpose the authority with which they are invested, to shield the one, and to rescue the other, from the rude attacks of a wantonness of innovation, that has attempted the violation of both. . . . It is possible, indeed, and we are willing to believe it, that Mr. Coleridge intends the "Christabel" as a serious burlesque on the models of the poetry of the day. In that light it must be acknowledged to be an amusing strain of delicate irony. In fact, if the *reductio ad absurdum* have any cogency, the "Christabel" is a pretty formidable argument to dispel infatuation.

As for *Biographia Literaria*, it was dismissed with the airy remark that it should be accounted to his credit as affording evidence that the goodness of the author's heart more than compensated for the badness of his head.

The opponents of the new romantic poetry were, however, no more successful in stemming its flow than in stopping the course of the romance. The magazines were forced to accept the new poetic mode; and the most its die-hard enemies could do was to attempt to prevent America from suffering the worst excesses of the movement. Their services in pruning extravagances like those of Moore and Southey deserve credit.

In both romance and poetry a vigorous conflict took place between those who felt that the new country provided inadequate materials and setting for literature and the defenders of the American scene. It was obviously difficult, as Brockden Brown learned to his cost, to try to transport to America the distant past required for the Gothic novel. Irving's ironic note in "The Legend of Sleepy Hollow," in which he places his story in a remote period of American history—"that is to say, thirty years ago"—was another artist's recognition of the difficulty. William Tudor, writing in the *North American Review*, declared that America possessed a rich mine

of subjects, more than rivalling Scott's, in colonial events; the Revolution, he felt, was too recent for immediate treatment. John Knapp, however, felt that the Revolution made up in historical grandeur and passionate patriotism whatever it lacked in the supernatural machinery of Gothicism. Shortly afterwards, Edward Tyrrell Channing protested against the attempt to write the Gothic novel about the United States, and recommended that American authors cultivate rather the sort of fiction which "makes the fable subservient to the developing of national character, or of the manners, usages, prejudices, and condition of particular classes." In this position he was ably supported by the New Yorker James K. Paulding. As the reviews amply testified, Catherine Sedgwick and other American novelists took this advice seriously to heart, and followed Scott in his *Antiquary* and *Heart of Midlothian* instead of *Anne of Geierstein*.

Naturally, there continued to be a demand, and an attendant supply, of tales of romantic adventure. The magazines indicate sharply their deficiencies. As W. H. Gardiner put in it the *North American Review*:

The art of writing an American novel, is neither more nor less, than the art of describing under American names such scenes as are in no respect American, peopling them with adventurers from all the quarters of the globe, except America, with a native or two here and there, acting as no American ever acts, and talking a language which, on the other side of the water, may pass for American, simply because it is not English.

Fenimore Cooper's novels fell at first under the same censure, but gradually won acceptance in the periodicals in spite of sharp criticism of their shortcomings in the critical eye.

Cooper's novels pointed up the greatest problem in the American story of adventure, the suitability of the Indian as a character of romantic fiction. In England and on the Continent, the Indian had early taken his place as a romantic figure, but in America he held a far different position. Since the settlers had ruthlessly mistreated the Indians, their descendants found it difficult to set these victims on any pinnacle. Indian raids on the frontiers were still too fresh in men's minds to wear any veil of romantic coloring; and the Indian problem on the frontiers was too real and perplexing to let many Americans think of the Indian as anything but a source of trouble. For these reasons, the first attempts to introduce Indian characters into American literature aroused violent argument.

Cooper's early novels touched off the argument. The opposition charged that

though the Indian possessed a lofty and commanding spirit, he lacked the variety of traits needed for literary portrayal. From so narrow a range of characteristics, no extensive, lofty poem could be produced. This, one must remember, was written before Catlin and Schoolcraft had opened new knowledge of the Indian. Within a year, this disparagement of the Indian was answered by the *North American Review* in a detailed study of Cooper's novels, in which the writer declared:

We have long since looked upon the character of the North American savage as one admirably calculated for an engine of great power in the hands of some ingenious master of romance, who had a true notion of this part of his subject.

Previous representations, he admitted, would have served equally for an Indian and "a chieftain of Timbuctoo, or the solitary hero of the moon." He evidently did not realize how Cooper had idealized his Indians.

Two years later, in 1828, the battle reopened. Another writer in the *North American Review*, asserting that the diminishing popularity of the Gothic romance had left open the way for descriptions of real life and characters who talk and act like ourselves, declared that in this later sort of tale the Indian would cut a sorry figure. To portray him satisfactorily, the author must abandon nature, which had made the Indian's life and thoughts of a monotonously narrow range. "The character of the Indian is simple, his destiny is a simple one, all around him is simple." The unnatural portraiture is absurd:

The Indian chieftain is the first character upon the canvass or the carpet; in active scene or still one, he is the nucleus of the whole affair; and in almost every case he is singularly blessed in some dark-eyed child, whose convenient complexion is made sufficiently white for the whitest hero. This bronze noble of nature, is then made to talk like Ossian for whole pages, and measure out hexameters, as though he had been practicing for a poetic prize.

Thus the reviewers' battle raged. Meanwhile, authors continued to turn out novels with Indian characters which the public devoured in blissful indifference whether the representation was probable or authentic. As in other matters, readers followed their preferences and ignored the critics.

American reviewers were deeply exercised by the intrusion of women into the writing profession. Some few, like Bryant, believed that they would contribute greatly to the culture of the country; others looked upon them as invaders of masculine territory. A writer in the *Polyanthus* for 1814, comparing authoresses to Amazons that rival men, wailed: "How happy would it have been for mankind if our adventurous

mother had never meddled with the tree of knowledge. And how important it is that her sex should be warned by her example!"

Learned female writers called to his mind morosity, sluttishness, ill-nature, "and a total renunciation of all the rules of social intercourse established among the polite." A writer in the 1841 *Southern Literary Messenger* affectionately warned young women of the perils besetting them if they essayed poetic authorship:

My dear girl, there is nothing, not positively dishonorable, that I would not as lief see you, as a poetess. Of all unstained characters, that is among the least respectable. . . . Recollect how large a store of homely, but priceless accomplishments may be attained with half the time and pains necessary to make even the poor figure of a middling poetess! How to cut out and make garments—to direct, and even to prepare, wholesome food—to nurse the sick—to manage a household—to ride a trotting horse if necessary—to dance like a fay and sing not in the squalling style.

The writer evidently felt that he was fighting a losing battle in these slight concessions to the interest in *Kinder, Kirche, Küche*, for, yielding fiction as lost ground, he added: "If you are bent on writing, cultivate a good prose style." A writer in the 1852 *Southern Quarterly Review* warned the female writer not to write stories of romantic adventure, but to restrict herself to tales of innocence suffering, of the simple annals of the poor. By so doing, she could "marshal us by the better promptings of our nature, and teach us the conquest of lust and cold-heartedness." Another, greatly daring, bade women not to write at all, but to pursue their special talent of animated conversation. The battle was lost. By the late thirties, Margaret Fuller had even invaded the territory of the critics with her trenchant reviews.

The problems mentioned in this paper are samples of many, all of which merit detailed discussion. Education, economics, politics, religion, science, and society were all laid under contribution. The literary problem was in fact closely tied up with all these matters in the one great problem which was constantly in the minds of the reviewers. These writers were men who had watched the early growth of the country through its growing pains. They had seen it escape being swallowed by foreign encroachment and were observing it as it coped with still unsettled internal difficulties. Their principal concern was that the United States develop its own peculiar culture, its own way of handling problems and looking at life. Because it was the first modern democracy, it had no preceding pattern, but must draw its own cultural blueprint. Without being infected by aristocratic thinking, it must draw from

earlier cultures its heritage of thinking and feeling, and incorporate its inheritance into its own life. To make a democratic culture was no simple problem. It required speculation and experiment. In their magazines, the early nineteenth-century writers provided discussion that was fruitful for their generation and is enlightening to us as we try to understand the beginnings of our culture.

Ornithology in Oklahoma . . .

areas concerning which we do not now have enough information. The teaching of ornithology at our Lake Texoma Biological Station will continue and develop. A course in Birds of the World will be offered at the University. Organizations like the Tulsa Audubon Society and Cleveland County Bird Club will spring up and grow. Bird students the State over will see to it that interesting specimens which come to hand are preserved with care. *The Scissortail*, the official organ of the recently organized Oklahoma Ornithological Society will continue to bind us all together.

I have been heartened tremendously by the University's furnishing our fine bird and mammal "range" at the museum with a new tiletex floor. *Range* is a word we ornithologists use for a room in which scientific skins are kept for reference and study. Our range is large, well-lighted, and well-ventilated—the direct result of Dr. Stovall's thoughtful planning. Mr. Hoover is building us five new book-cases for my big ornithological library, not to mention dozens of new trays for the metal bird-cases.

For the Birds of the World course I plan to offer next year, many new specimens will be needed—a Kiwi from New Zealand, a Cassowary from Australia, a Frogmouth from New Guinea, a Screamer from South America, to mention only four. Alumni and friends can help us gather these specimens. Some will come from zoological parks, some from other museums, some straight from the field.

We shall have a glorious time together studying birds—preserving specimens as they come to hand, carrying on life history studies, banding birds, feeding birds in winter, seeing to it that bird habitats are preserved. Much work is to be done. Doing this work together can enrich the lives of all of us. I predict that it will.

In his dissertation for the degree of Doctor of Education, Ernest Allen Jones points out that approximately 63 percent of the students entering Oklahoma colleges and universities from 1948 to 1952 had less than average reading ability. About 21 per cent possessed adequate reading ability for study in our colleges.

The Atmosphere for Progress in Science and Technology

By BERNARD O. HESTON

In recent months there have been cries that science is being stifled by those who would insist upon secrecy, especially in connection with the atomic energy program in the United States. Those who demand that the results of many current investigations be kept secret believe, and presumably in good faith, that the security of this nation depends upon our having a body of knowledge which has not yet been acquired by other peoples. A part of this belief arises from a non-uniformity of definition, and perhaps another part from the failure to look to the past to discover the effects of this kind of isolationism.

To begin with we must agree upon a definition of science, and for the purpose of this discussion, we limit ourselves to the field which many call pure science; applied science we term technology. Thus science will mean the study of the fundamental behavior of the universe, the discovery of physical laws, and the development of hypotheses and theories which will guide our thinking. When the observable facts agree with the theories and hypotheses, we say that we understand the field under investigation. The scientist is engaged in gaining this understanding, and in the process he must acquire many new factual observations from the world about him.

Many of the factual observations of the scientist, with or without the intervention of some theory, may be put to practical use. This exploitation of science and the kind of information the scientist used, is technology. Perhaps an example or two will

further distinguish between these fields of endeavor.

The geologist may examine a specimen obtained from a prospective oil well, and, if he is not busy with the production of petroleum, he will be interested in the rock as an indication of the age of the particular formation. The adjoining formations will tell him, through the application of a theory about the formation of the crust of the earth, something about the history of his sample. He may be able to estimate the climatic conditions which prevailed before or during the formation of the stone. When he has completed his examination, he will be satisfied that he knows more about the earth, and he may even be able to use new observations for an extension of theory. This is pure science at work.

The petroleum geologist, or perhaps only the driller who has no special theoretical knowledge, may examine the same specimen and recognize it as the same formation which he encountered in the past. He may even be led to predict the probable success of the venture on the basis of past experience. He is not concerned with the age of the earth, and when he finishes his examination, he expects only to obtain practical results, that is, more oil, rather than an increase in knowledge. This use of knowledge is technology.

Most recent and striking example of the difference between science and technology is in the field of atomic energy.



About the Author

Dr. Heston, whose specialty is physical chemistry, came to the University in 1942 as an Assistant Professor of Chemistry, was made an Associate Professor in 1942, and Professor in 1947. He had taught at the State Teachers College, Duluth, Minnesota, and at Oklahoma A. and M. College before joining the University faculty. A member of Phi Beta Kappa, Sigma Xi, and American Chemical Society, he is active in research as well as successful as a teacher.