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### **Mental Improvement and Vital Piety: Isaac Watts and the Benefits of Astronomical Study\***

One of the most popular of eighteenth-century books on astronomy was written not by a scientist but by a non-conforming divine. Isaac Watts (1674-1748), a prolific writer whose collected works run to six sturdy volumes, was among the most widely read authors of his own and the subsequent age.<sup>1</sup> Most of Watts's books appeared in multiple editions and some were reprinted hundreds of times.<sup>2</sup> The range of his interests was similarly extensive. In addition to the hymns for which he now is best remembered,<sup>3</sup> Watts produced volumes of religious poetry of sufficient quality for Samuel Johnson to include him in his *Lives of the Poets* and also penned children's poems still well enough known in 1865 to be parodied by Lewis Carroll. His theological works were numerous, as were his educational writings. And yet Watts also found time to write on metaphysical topics and to prepare catechisms for children of various ages. Among this plethora is a lone scientific work, *The Knowledge of the Heavens and the Earth Made Easy*. It could hardly be claimed that this brief book was scientifically important, but there are reasons, aside from its great popularity, for finding the work historically significant. Along with numerous other references to astronomical subjects scattered throughout Watts's writings, it provides an excellent window on eighteenth-century perceptions of the importance of the study of astronomy and of beliefs about the benefits that could be derived from such a pursuit.

Theology and education were perennially at the heart of Watts's concerns: one is almost tempted to say that they were his passions, if that word did not seem rather too intense a term to use in connection with so sickly and small, so reserved and rational, a man. Considering his family background, an interest in these two subjects is not surprising. Neither is the fact that, for him, they should have been so inextric-

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ably connected. Indeed Watts believed that it was his mission in life to "Christianize Knowledge."

Watts's mother was descended from a Huguenot family which had fled religious persecution. His father, a prominent Southampton non-conformist, was jailed for his religious beliefs soon after the birth of Isaac, his eldest son—and not for the first time. Somewhat later Mr. Watts was forced for this same reason to leave his family for two years to live, in virtual hiding, in London. Nonetheless he was financially successful as befitted one of the "saints," supporting his family as a "clothier"—that is, a clothmaker.<sup>4</sup> But Mr. Watts was also—by inclination, it is said—a schoolmaster, running his own boarding school for non-conformist youth. Such non-conforming schools had been prohibited under the Test Act, and the Southampton Quarter Rolls for April 1682 show a Joseph Hancock as laying information that Watts kept a "private schols." Watts, being found guilty, was fined £40, the money being equally divided among the King, the poor of the parish of St. Mary's, and the informer. Even this heavy penalty was apparently insufficient to deter Mr. Watts. The parish rolls of 1697 show him living with his wife, four children, and thirty-two boarders.

The education of the family's eldest son began at home and continued at a local grammar school whose headmaster was a rector of the established church. In 1690, however, Watts entered the Stoke Newington Academy. This school was one of the dissenting academies which had been founded after the Restoration to provide an alternative to the university education which in 1662 had been denied to non-conformists by the Act of Uniformity.

In the best of these academies, instruction was offered by men such as Philip Doddridge, Richard Price, and Joseph Priestly, individuals of "outstanding" intellectual ability and complete integrity of purpose.<sup>5</sup> These schools were often small, typically suffered from inadequate facilities, and were sometimes forced to move from place to place to avoid persecution. Yet in them that zeal to teach and learn which can overcome so much in an educational institution was often conspicuous. The range of subjects taught was much greater than at Oxford and Cambridge, and serious scholars were drawn to these schools by the breadth of their curricula and the wider notion of education accepted there. As J.H. Plumb<sup>6</sup> has noted, "the dissenting academies were the first schools in which economics, history, and natural science were systematically taught, and this gave them an attractive modernity, which drew them to pupils from circles far wider than those of dissent."

Among Watts's most notable characteristics was the persistence with which he pursued certain goals, the consistency of his interest in

certain topics, and the zeal with which he sought to elucidate the links among them. As T. Roland Hopper was quoted as saying,<sup>7</sup> "One of the most noticeable features in Watts was the orderliness of his mind, consequently there is consistency of thought and expression in everything he wrote—hymns, poems, essays, sermons." One of the fields in which Watts maintained a lifelong interest and which he tried to integrate with his other, more central, concerns was astronomy. The youth's interest in this science had apparently been sparked at an early age.

Upon attaining his sixth year, the great comet of 1680 was the marvel and wonder of the day; and Watts frequently spoke in after-life of the deep impression which the brilliant wanderer made upon his mind. In most minds, where the imagination is the predominant Faculty, the influence of external nature is strongly felt; and the impression made upon Watts by the 'stranger of heaven,' vivid and long remembered, seems to have given a tone and colouring to some of his poetry.<sup>8</sup>

And, as will become evident, to far more than his poetry.

Watts may have been formally introduced to the field of astronomy at Rowe's academy. Harvey<sup>9</sup> implied that during his days there Watts "had imbibed an enthusiasm for astronomy and mathematics," while an anonymous nineteenth century commentator<sup>10</sup> claimed that the science had been a subject of instruction at the Stoke Newington academy. No evidence was provided by either writer and records of the school's curriculum have not survived.

Upon the completion of his studies at Rowe's academy in 1695, the young man, not yet feeling ready to enter the ministry for which he had been preparing, returned to his home in Southampton. For a year Watts devoted himself to systematic reading, meditation, and prayer. While at home he also produced the earliest of his literary productions, the first of his hymns. Even in these early efforts, as we shall see, Watts delineated the links he perceived between different topics—in this case, religion and astronomy.

In October of the following year Watts entered the household of an eminent nonconformist Sir John Hartopp as tutor to the future baronet (and to a lesser extent the family's other children). The next five years reinforced many of the interests Watts had already begun to develop. Yet in other respects it was a formative period for him as well. In moving into the home of this prosperous and eminent nonconformist, Watts was establishing himself in the segment of society in which he would spend the remainder of his life.<sup>11</sup> Sir John Hartopp had intellectual and scientific interests as well as political. Many years later—on April 5, 1722—Watts was to write the funeral sermon for his friend.

[Hartopp] had a taste for universal learning, and ingenious arts were his delights from his youth. He pursued knowledge in various forms, and was acquainted with many parts of human science. Mathematical speculations and practices were a favourite study with him in younger years; and even to his old age he maintained his acquaintance with the heavenly bodies, and light and shade whereby time is measured.<sup>12</sup>

It was in the Hartopp household that Isaac Watts' notions of education began to develop under that most potent of prods, the need to impart knowledge to another.

And I cannot but reckon it among the blessings of heaven, when I review those five years of pleasure and improvement, which I spent in his family in my younger part of life; and I found much instruction myself, when I was called to be an instructor.<sup>13</sup>

Drafts of a number of Watts' future educational works were prepared for use in the household, although none of them was to be published for many years. Included in this list of Watts' works was the *Logic*, the *Improvement of the Mind*, and *The Knowledge of the Heavens and Earth Made Easy*. In the preface to the first edition of the *Knowledge* (June 11, 1725) Watts wrote that many of the papers on which the book had been based "have lain by me in silence above twenty years."<sup>14</sup> In that preface Watts also wrote:

It was chiefly in the younger part of my life, indeed, that these studies were my entertainment; and being desired, both at that time, as well as since, upon some occasions to lead some young friends into the knowledge of the first principles of geometry and astronomy, I found no treatise on those subjects written in so very plain and comprehensive a manner as to answer my wishes: Upon this account I drew up the following papers, and set everything in the light in which it appeared most obvious and easy to me.<sup>15</sup>

It was during this period—in 1698—that Watts began to preach. Later that same year he was appointed assistant to Dr. Isaac Chauncy in an Independent Congregation then meeting at Mark Lane in London. He was associated with this church for the rest of his life. And despite the range of Watts' interests, one should never forget the central feature of his approach which was to be summed up so well by Samuel Johnson:<sup>16</sup> "but the truth is, that whatever he took in hand was, by his incessant solicitude for souls, converted to theology. As piety predominated in his mind, it is diffused over his works. . . it is difficult to read a paper without learning, or at least wishing to be better."

In 1702, having been ordained over the church in Mark Lane, Watts left the Hartopp household to be closer to his own work. He went to live, in London, with Thomas Hillis, yet another of what Pinto<sup>17</sup>

termed the "aristocracy of Puritanism." Like so many of this group, Hillis was interested in "the education of the dissenting group and left at his death in 1732 a considerable sum of money to Harvard, one of several of his family to act as benefactor to that institution." He also "founded the first professorship of mathematics and natural philosophy at Harvard and, with Watts's aid, picked Isaac Greenwood as the first occupant of the chair."<sup>18</sup> It was probably through the Hollis family that Watts's many contacts with America were initiated.

In 1712, soon after leaving the Hollis home, Watts was invited to visit the house of Sir Thomas Abney to recuperate from one of his many bouts of illness. Sir Thomas was one-time Lord Major of London, and the Abneys belonged to the same company of successful "saints" as the Hartopp and Hollis families. Watts was to remain in the Abney household for the rest of his life.

Despite Watts's early and continuing interest in astronomical matters, the manual on astronomy which he had prepared for his pupil John Hartopp some time about 1700 was not published for a further quarter-century. In common with most of his educational texts, the *Knowledge of the Heavens and Earth Made Easy* was written initially because in his role as a tutor Watts "could find no 'plain and easy text' on the subject."<sup>19</sup> His writing was often motivated by a wish to satisfy some such need which he perceived or had pointed out to him.<sup>20</sup> The book's publication many years later may well have been prompted by Watts' awareness that in his day a majority of small private schools provided instruction in astronomy, navigation, and surveying.<sup>21</sup>

Watts made no claim for the scientific originality of the *Knowledge*. His purpose in writing the book was to introduce the beginning student to astronomy. The best way to learn it, or indeed any science, he believed, "is to begin with a regular system, or a short and plain scheme of that science, well drawn up into a narrow compass, omitting the deeper and more abstruse parts of it. . . ."<sup>22</sup> Watts would probably have been pleased with the judgement of a twentieth-century expert, Dr. Jan Schilt, Rutherford Professor of Astronomy at Columbia University. Asked to comment on the book by one of Watts's biographers, Schilt is quoted as saying: "For its age and avowed purpose of introducing the study of astronomy to the beginning student, it was an excellent text. The outstanding feature of the work is its clarity."<sup>23</sup>

Watts argued in the *Knowledge* that every young person would benefit from the study of geography and astronomy.<sup>24</sup> The earth is, after all, our "habitation", and commerce requires a detailed knowledge of its features. Similarly the passage of time is dependent upon planetary movement. "The heavenly bodies, which are high over our heads, measure out our days and years, our life and time, by their

various revolutions. Now life and time are some of the dearest things we have, and it is of important concern to distinguish the hours as they pass away, that proper seasons may be chosen and adapted for every business."<sup>25</sup> Perhaps even more significantly, a knowledge of the "mathematical sciences" promotes "vital piety."<sup>26</sup> These disciplines enable one to understand many things discussed in the scriptures and to "raise" one's ideas of God the Creator to a high "pitch." In the dedication to the *Knowledge*, Watts introduced many of the points about the value of astronomy which he was to make frequently in his various other writings.

If we look upward with David, to the worlds above us, *we consider the heavens as the work of the finger of God, and the moon and the stars which he hath ordained.* What amazing glories discover themselves to our sight? What wonders of wisdom are seen in the exact regularity of their revolutions? Nor was there ever any thing that has contributed to enlarge my apprehension of the immense power of God, the magnificence of his creation, and his own transcendent grandeur, so much as that little portion of astronomy which I have been able to attain. And I would not only recommend it to young readers for the same purposes, but I would persuade all mankind, if it were possible, to gain some degrees of acquaintance with the vastness, the distances, and the motions of the planetary worlds on the same account. It gives an unknown enlargement to the understanding, and affords a divine entertainment to the soul and its better powers. With what pleasure and rich profit would man survey those astonishing spaces in which the planets revolve, the hugeness of their bulk, and the almost incredible swiftness of their motions? And yet all these governed and adjusted by such unerring rules, that they never mistake their way, nor lose a minute of their time, nor change their appointed circuits in several thousands of years! When we muse on these things we may lose ourselves in holy wonder, and cry out with the Psalmist, *Lord, what is man, that thou art mindful of him? and the son of man, that thou shouldst visit him?*<sup>27</sup>

Watts's interest in astronomy predictably did not end with the publication of his *Knowledge of the Heavens and Earth Made Easy*. References to astronomical and geographical matters abound throughout his works, including his hymns and the perennially popular *Improvement of the Mind*. This latter work, like the *Knowledge*, was begun during the period the young tutor spent in the Hartopp household, and, like it, was not to be published for many years. In keeping with his characteristic tendency to orderliness and consistency of thought, Watts in the *Improvement*, related astronomy to his major concerns: education and the improvement of the mind; religion or "vital piety," and, the promulgation of a set of values which, while rooted in a Puritan past, had a continuing relevance not only for dissenters but for a considerable section of the rising middle ranks of society. Indeed, it was

primarily for its value in promoting these various ends that Watts was interested in the subject.

Watts's reasons for believing that a knowledge of astronomy was valuable, which he had first touched on in the preface to the *Knowledge*, were expanded upon in his later writings. These reasons were various and ranged from the trivial to the profound. Geography and astronomy, he argued in his posthumously published *Discourse on the Education of Children and Youth*, are exceedingly delightful studies" without which "no person of either sex is now esteemed to have had an elegant education."<sup>28</sup> In common with the related subjects of surveying and measuring, they are "entertaining" and "useful" accomplishments. Furthermore a knowledge of astronomy is required for an understanding of the passage of time. With an acquaintance of the "heavenly bodies" and their "motions and periods of revolution", we may understand "the accounts of time in past ages, and the histories of ancient nations, as well as know the reasons of day and night, summer and winter, and the various appearances and places of the moon and other planets."<sup>29</sup>

In the eighteenth-century—the age of 'reason' and 'enlightenment'—the fight against superstition was often well to the fore in the conscious awareness of educated men. A knowledge of planetary movements was, for Watts, a major bulwark against one of the most common forms of illiterate superstition.

Then we shall not be terrified at every eclipse, or presage, and foretel public desolations at the sight of a comet: we shall see the sun covered with darkness, and the full moon deprived of her light, without foreboding imaginations that the government is in danger, or that the world is come to an end. This will . . . increase rational knowledge, and guard us against foolish and ridiculous fears . . .<sup>30</sup>

Watts's *Logic* (1724)—again prepared, at least in part, for the young Hartopp—had as its goal the spread of such reason and enlightenment. In this book the writer attempted to provide "logical rules and principles of genuine utility in general human practice."<sup>31</sup> In a supplement to that work, he provided "the illustration of these principles in their practice and action."<sup>32</sup> This supplement, the *Improvement of the Mind* (1741) was Watts's best known and most widely read work, the *Hymns and Songs* only excepted. As the name suggests, the book contains the central statement of one of Watts's—and the age's—most strongly held convictions.

Thus it appears to be the necessary duty and the interest of every person living to improve his understanding, to inform his judgement, to treasure up useful knowledge, and to acquire the skill and good reasoning,

as far as his station, capacity, and circumstances, furnish him with proper means for it.<sup>33</sup>

The opportunities for such self-improvement would not necessarily end with death either. In 'The World to Come' Watts wrote that in heaven "not only is there the service of thanksgiving here and of prayer, but such entertainments as lectures and sermons also, . . ." <sup>34</sup>

There are several general methods by which the mind may be improved. Watts discussed each of them at some length in the *Improvement*. These include observation, reading, instruction by lectures, conversation, and study or meditation.

These five methods of improvement should be pursued jointly, and go hand in hand, where our circumstances are so happy as to find opportunity and conveniency to enjoy them all: though I must give my opinion that two of them, viz. reading and meditation, should employ much more of our time than public lectures, or conversation and discourse. As for observation, we may always be acquiring knowledge that way, whether we are alone, or in company.<sup>35</sup>

While astronomy is obviously not a primary topic of the *Improvement*, scattered throughout the work's pages are numerous references to that science which illustrate Watts's belief in its usefulness both for its own sake and for its value in promoting one of his primary goals, mental self-improvement. Astronomy's most important role, he thought, may be in the part it may play in "enlarging the capacity of the mind," a topic to which the whole of Chapter XVI is devoted. The "amplitude or capacity of mind,"<sup>36</sup> is one of its noblest characteristics. This amplitude is present:

"(1.) When the mind is ready to take in great and sublime ideas without pain or difficulty. (2.) When the mind is free to receive new and strange ideas, upon just evidence, without great surprise or aversion. (3.) When the mind is able to conceive or survey many ideas at once without confusion, and to form a true judgement derived from that extensive survey."<sup>37</sup>

The lack of any one of the three means that, in that respect, the individual has a "narrow genius."

The first of these indications of an enlarged mind, the ability to grasp easily "great and sublime" ideas, is typically absent in those with no experience beyond immediate, daily concerns. For such people, the common and usual will be the standard against which the possibility of the unfamiliar will be judged.

Talk to them of the vast dimensions of the planetary worlds; tell them that the star called Jupiter is a solid globe, two hundred and twenty times bigger than our earth; that the sun is a vast globe of fire above a



thousand times bigger than Jupiter; that is, two hundred and twenty thousand times bigger than the earth; that the distance from the earth to the sun is eighty-one millions of miles; and that a cannon-bullet, shot from the earth, would not arrive at the nearest of the fixed stars in some hundreds of years; they cannot bear the belief of it, but hear all these glorious labours of astronomy as a mere idle romance.<sup>38</sup>

Such "unenlarged souls" are equally unable to accept "the wonders which the microscope has discovered. . . ."<sup>39</sup>

It is possible to reverse such a defect. By exposing those who suffer from it to the study of natural philosophy, it should be possible to persuade them of the expansiveness of space and the almost limitless divisibility of physical matter. One might begin with teaching the circumference of the earth, using the testimony of those who have sailed around it as evidence. Next the speed of planetary movement might be demonstrated.

Such a thought as this will, by degrees, enlarge their minds, and they will be taught, even upon their own principle of the diurnal revolutions of the heavens, to take in some of the vast dimensions of the heavenly bodies, their spaces and motions.<sup>40</sup>

Astronomy and geography are not the only subjects the study of which will enlarge the mind's capacity; epic poetry is also useful as are the "poetical parts of the Bible." But astronomy is probably foremost among those fields which "have a natural tendency to enlarge the capacity of the mind, and make sublime ideas familiar to it."<sup>41</sup> It is particularly useful in developing an appreciation of some of the most important of such great ideas, those of vastness, speed, and power (the last, secondarily from a consideration of the power of God, the creator of the universe).

The second characteristic of a mind "of capacity or amplitude" is an ability to accept novel ideas without surprise or objection when reasonable evidence is presented. Once again, astronomy can be used both as a test of a mind's capacity in this regard and as a means of enlarging its amplitude. Watts wrote, with regard to the former function, for example:

How much is the vulgar part of the world surprised at the talk of the diurnal and annual revolutions of the earth! . . . Tell these persons that the sun is fixed in the centre, that the earth, with all the planets, roll around the sun in their several periods, and that the moon rolls round the earth in a lesser circle, while, together, with the earth, she is carried round the sun; they cannot admit a syllable of this new and strange doctrine, and they pronounce it utterly contrary to all sense and reason.<sup>42</sup>

The third characteristic ability of a mind which is 'enlarged' is the capacity to deal, without becoming confused, with a number of ideas at once. It is neither easy nor common for individuals to be able to grasp many ideas—and the interrelations among them—concurrently, quickly and accurately. When it does occur, it appears to be the result of a natural talent. It is possible, however, to expand one's abilities in this regard by "diligence and application, [and] by frequent exercise."<sup>43</sup> Although one can easily imagine how Watts might have believed that a study of the universe, with its myriad inter-related parts, might be a proper vehicle for this sort of improvement, none of the examples he gives is explicitly astronomical.

From his earliest days, as we have noted, Watts had been primarily interested in the two fields of education and religion. Useful as astronomy might be for the first of these because it can assist the improvement of the "natural powers"<sup>44</sup> or "faculties,"<sup>45</sup> a study of the field could be valued even more highly because of its use in deepening an understanding of religion, "the principle thing in which children should be instructed."<sup>46</sup> For Watts, like other Protestant educational theorists of his day, the study of nature was seen as desirable in part because it would reinforce religious knowledge gained from other sources. "The Reformation provided the religious reason for the study of nature and 'things' instead of 'words.' God created the world and the best way to understand the working of the divine law was to study his creation."<sup>47</sup> Nature, it was believed, was a book in which man could read about the Deity. "When we are abroad in the country, we behold . . . the works of God."<sup>48</sup>

Watts' dual aim of promoting religion and mental improvement is exemplified in a section from the *Improvement* on the value of observation as a method of gaining knowledge.

Fetch down some knowledge from the clouds, the stars, the sun, the moon, and the revolutions of all the planets; dig and draw up some valuable mediations from the depths of the earth, and search them through the vast oceans of water: extract some intellectual improvements from the minerals and metals, from the wonders of nature among the vegetables and herbs, trees and flowers. Learn some lessons from the birds, and the beasts, and the meanest insect. Read the wisdom of God, and his admirable contrivance in them all. Read his almighty power, his rich and various goodness, in all the works of his hands.<sup>49</sup>

The same point is made in the *Discourse on Education*.<sup>50</sup> Watts argued that "to know something of the heavenly bodies . . . has a most happy tendency to raise in our thoughts the noblest and most magnificent ideas of God by the survey of his works in their surprising grandeur and divine artifice."

Of the various aspects of nature, the heavens can reveal most about God and his attributes: "The heavens declare thy glory, Lord; In every star thy wisdom shines."<sup>51</sup> This comparative advantage is due in part, Watts believed, to the greater level of knowledge of their field which astronomers had obtained as compared with other natural scientists. The specific advantages which a study of astronomy brings result from the development of an awareness of the characteristics of the universe. The first aspect of the universe which is revealed is its vastness, the enormity of its reaches. This theme recurs frequently in his hymns and psalms. Watts wrote in the former for example, of "lofty Skys,"<sup>52</sup> of "the wide Earth and Wider Skys,"<sup>53</sup> and of "unmeasur'd spaces."<sup>54</sup> The notion of spaciousness permeates his poetic lines. Secondly, and in keeping with the emphasis on the vastness of space, was an accompanying stress on the infinity of time: "the vast round of endless year,"<sup>55</sup> "vast as eternity." Through the vastness of space and time, the heavenly bodies move and the "Wheels of Nature Roll."<sup>56</sup> And such motion is not only supremely ordered in its course but is also of enormous speed: "The shining worlds above in glorious order stand, Or in swift courses move. . . ."<sup>57</sup> All these characteristics of the universe will be revealed by a study of astronomy.

A study of astronomy, as we noted earlier, is useful in "enlarging the capacity of the mind," making it possible for an individual to grasp those various ideas noted above. Such an ability is also necessary to understand the "sublime." For Watts, the universe becomes a metaphor for, and a means of grasping in some small measure, the nature of God and his attributes. For Watts saw God, not unexpectedly, as the Creator and sustainer of this universe, with all its vastness of space and time, its speed of movement, and its perfection of order.

"By his own Pow'r were all things made;  
By him supported all things stand."<sup>58</sup>

Whoever created the universe must not only share in its characteristics but have them in greater abundance too. Long lasting as eternity may be, God existed prior to the existence of the universe and will remain after it has ceased to be. And God's power is similarly great.

Jesus shall reign where're the sun  
Does his successive journies run.  
His kingdom stretch from shore to shore  
Till moons shall wax and wane no more.<sup>59</sup>

But it is not only God's power—as creator and ruler—which a study of astronomy can help us to comprehend. God's other attributes are of a similarly grand scale, and the study of astronomy can help us grasp

something of their magnitude because it has helped to "enlarge the capacity of our minds." In Hymn 43 we find a reference not only to God's power but to another of his attributes as well: "Wide as the World is thy Command, Vast as Eternity thy Love."<sup>60</sup> And in Hymn 46 we read "Wise as his vast Dominion lies. . . ."<sup>61</sup> But while Watts's religious conceptions always tended to the cosmic, he was never far from the doctrine of grace, and here too we find a link with astronomy.

"His very word of Grace is strong  
As that which built the Skies. . . ."<sup>62</sup>

Astronomy, as we have seen, can claim with pride to be able to do its part in the educational principle and aim which Watts expressed in the introduction of his *Discourse on the Education of Children and Youth*:<sup>63</sup> ". . . let children have a good education given them in the younger parts of life, and this is the most likely way to establish them in virtue and piety in their elder years." The science was, as well, a perfect example of the central intent of Watts which was described so well by an anonymous nineteenth century commentary: "And with this two-fold aim,—seeking at once to Christianize knowledge and to refine and expand the mind of the Christian community, —he took up in succession, Logic, Astronomy, Geography, English Grammar, Scriptures, and History."<sup>64</sup> Astronomy was the ideal vehicle for the "business" Watts felt he had been given by God: "to join together those whom men had put asunder—mental culture and vital piety."<sup>65</sup>

#### NOTES

1. In *The Funeral Elegy and the Rise of English Romanticism* (New York: University Press,) p. 236, J. W. Draper noted that Watts could claim as many readers in the reign of Queen Anne as Addison—and this was early in Watts's career.
2. T. W. Laqueur has, for example, actually traced 314 editions of the *Divine and Moral Songs* published before 1850, and even this list is certainly incomplete. See his *Religion and Respectability: Sunday Schools and Working Class Culture, 1780-1850*, (New Haven: Yale University Press, 1976).
3. These include many of the most perennially popular of hymns, including "O God, Our Help in Ages Past," "Joy to the World," and "Jesus Shall Reign Where'er the Sun."
4. Mr. Watts's property, as the Southampton Tax assessments show, increased steadily in value from 1674 to 1691. Indeed throughout that period he was the most highly taxed person in his parish.
5. H. Escott, "Isaac Watts: Nonconformist," *The London Quarterly and Holborn Review*, 174 (1949), p. 55.
6. *England in the Eighteenth Century*, (Harmondsworth: Penguin, 1950), p. 134.
7. T. Wright, *The Lives of the British Hymn Writers*, (London: n.a., 1914), vol. 3, p. 130.
8. T. Milner, *The Life, Times and Correspondence of the Rev. Isaac Watts, D.D.* (London: Simpkins & Marshall, 1834), p. 59.
9. F. B. Harvey, "The Two Isaacs: Newton (1642-1727); Watts (1674-1748)," *The London Quarterly and Holborn Review*, 174, (1949), p. 128.

10. Anonymous, "Isaac Watts," *North British Review*, 26, (1857), p. 13.
11. Sir John Hartopp was connected by marriage to Oliver Cromwell. Chosen three times as parliamentary representative for his native county of Leicestershire, Hartopp was also appointed High Sheriff in 1671.
12. I. Watts, *The Works of the Reverend and Learned Isaac Watts, D.D.* Edited by Rev. G. Burder (London: J. Barfield, 1810), vol. 6, p. 71. The six volumes which comprise these collected works were reprinted by A.M.S. Press in 1971.
13. Watts, 1810, vol. 2, p. 72.
14. Watts, 1810, vol. 5, p. 412.
15. *Ibid.*, pp. 410-411.
16. Quoted in S. Palmer (Ed.), *The Life of the Rev. Isaac Watts, D.D. by Samuel Johnson, LL.D and Notes Containing Anemadversions and Additions*, (London: for J.F. and C. Rivington and J. Buckland, 1785), p. 22.
17. V. de S. Pinto, "Isaac Watts and the Adventurous Muse," *Essays and Studies* [of the English Association, London], 20, (1935), p. 89.
18. A. P. Davis, *Isaac Watts, his Life and Work*, (London: Independent Press, 1943), p. 29. It is possible, as Milner (1834, p. 205) stated, that it was Thomas Hollis's similarly named son who was the benefactor of Harvard. It should be noted that there had been links between British non-conformity and American colleges at least since the Dissenters were banned from the English Universities. Theophilus Gale, the founder of the Stoke Newington Academy, had left his library—other than his philosophical books—to Harvard at his death in 1678.
19. *Ibid.*, p. 87.
20. Although not much concerned about the monetary side of his numerous publishing ventures, the writer did apparently enjoy the popularity many of his works achieved.
21. Nicholas Hans examined the existing records of 28 such schools, confirming that these subjects were indeed commonly a part of their curriculum. See J.K.H. Rose, *Isaac Watts, his Pedagogic Writings and Their Place in Eighteenth-Century Education*. (Unpublished: University of London, M.A. thesis, 1965), p. 6.
22. I. Watts, *The Improvement of the Mind (in two parts) to which is appended a Discourse on the Education of Children and Youth*, (London: n.a., 1844), p. 214. This work was first published in 1741.
23. Davis's paraphrase, 1943, p. 87.
24. The same could not be said, in Watts's opinion, for the ancient languages. He believed that education should in some measure be tailored to the social position of students. For many youths of modest background and prospects, a knowledge of the classical languages was not worth the time expended upon them.
25. Watts, 1810, vol. 5, p. 409.
26. Anonymous, 1857, p. 23.
27. Watts, 1810, vol. 5, p. 410.
28. Watts, 1844, p. 347.
29. *Ibid.*, p. 348.
30. *Ibid.*, p. 347.
31. J. Laird, *Philosophical Incursions into English Literature*, (Cambridge: Cambridge University Press, 1946), p. 65.
32. [E. P. Hood], *Isaac Watts: His Life and Writings*, (London: n.a., 1875), pp. 275-276.
33. Watts, 1844, p. 16.
34. Watts, quoted in [Hood], 1875, p. 232.
35. Watts, 1844, p. 45.
36. *Ibid.*, p. 152.
37. *Ibid.*
38. *Ibid.*
39. *Ibid.*; p. 153.
40. *Ibid.*, p. 154.
41. *Ibid.*, p. 155.
42. *Ibid.*, p. 160.
43. *Ibid.*, p. 165.
44. *Ibid.*, p. 318.
45. *Ibid.*, p. 319.
46. *Ibid.*, p. 318.
47. N. Hans, *New Trends in Education in the Eighteenth Century*, (London: Routledge, Kegan Paul, 1951), p. 11.
48. Watts, 1844, p. 46.

49. *Ibid.*
50. *Ibid.*, p. 348.
51. Watts, 1810, vol. 4, p. 140.
52. I. Watts, *Hymns and Spiritual Songs. In Two Books.* (London: n.a., 1707), book 2, #17.
53. *Ibid.*, No. #21.
54. *Ibid.* #75.
55. Watts, 1707, book 1, #40.
56. Watts, 1707, book 2, #71.
57. Watts, 1810, vol 4, p. 238. Quoted from Psalm 148.
58. Watts, 1707, book 1, #2.
59. Watts, 1810, vol. 4, p. 179. Quoted from Psalm 72.
60. Watts, 1707, book 1.
61. *Ibid.*
62. *Ibid.*, #69.
63. Watts, 1844, p. 313.
64. Anonymous, 1857, p. 22.
65. *Ibid.*, p. 23.