

INTRODUCTION

I

THE LIFE OF HUXLEY

OF Huxley's life and of the forces which moulded his thought, the *Autobiography* gives some account; but many facts which are significant are slighted, and necessarily the later events of his life are omitted. To supplement the story as given by him is the purpose of this sketch. The facts for this account are gathered entirely from the *Life and Letters of Thomas Henry Huxley*, by his son. For a real acquaintance with Huxley, the student should consult this source for himself; he will count the reading of the *Life and Letters* among the rare pleasures which have come to him through books.

Thomas Henry Huxley was born on May 4, 1825. His autobiography gives a full account of his parents, his early boyhood, and his education. Of formal education, **Early education.** Huxley had little; but he had the richer schooling which nature and life give an eager mind. He read widely; he talked often with older people; he was always investigating the why of things. He kept a journal in which he noted thoughts gathered from books, and ideas on the causes of certain phenomena. In this journal he frequently wrote what he had done and had set himself to do in the way of increasing his knowledge. Self-conducted, also, was his later education at the Charing Cross Hospital. Here, like Stevenson in his university days, Huxley seemed to be idle, but in reality, he was always busy on his own private end. So constantly did he work over the microscope that the window at which he sat came to be dubbed by his fellow students "The Sign of the Head and Microscope." Moreover, in his regular courses at Charing Cross, he seems to have done work sufficiently notable to be recognized by several prizes and a gold medal.

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Of his life after the completion of his medical course, of his search for work, of his appointment as assistant surgeon on board the *Rattlesnake*, and of his scientific work during the four years' cruise, ^{Search for work.} Huxley gives a vivid description in the autobiography. As a result of his investigations on this voyage, he published various essays which quickly secured for him a position in the scientific world as a naturalist of the first rank. A testimony of the value of this work was his election to membership in the Royal Society.

Although Huxley had now, at the age of twenty-six, won distinction in science, he soon discovered that it was not so easy to earn bread thereby. Nevertheless, to earn a living was most important if he were to accomplish the two objects which he had in view. He wished, in the first place, to marry Miss Henrietta Heathorn of Sydney, to whom he had become engaged when on the cruise with the *Rattlesnake*; his second object was to follow science as a profession. The struggle to find something connected with science which would pay was long and bitter; and only a resolute determination to win kept Huxley from abandoning it altogether. Uniform ill-luck met him everywhere. He has told in his autobiography of his troubles with the Admiralty in the endeavor to get his papers published, and of his failure there. He applied for a position to teach science in Toronto; being unsuccessful in this attempt, he applied successively for various professorships in the United Kingdom, and in this he was likewise unsuccessful. Some of his friends urged him to hold out, but others thought the fight an unequal one, and advised him to emigrate to Australia. He himself was tempted to practice medicine in Sydney; but to give up his purpose seemed to him like cowardice. On the other hand, to prolong the struggle indefinitely when he might quickly earn a living in other ways seemed like selfishness and an injustice to the woman to whom he had been for a long time engaged. Miss Heathorn, however, upheld him in his determination to pursue science; and his sister also, he writes, cheered him by her advice and encouragement to persist in the struggle.

Something of the man's heroic temper may be gathered from a letter which he wrote to Miss Heathorn when his affairs were darkest. "However painful our separation may be," he says, "the spectacle of a man who had given up the cherished purpose of his life . . . would, before long years were over our heads, be infinitely more painful." He declares that he is hemmed in by all sorts of difficulties. "Nevertheless the path has shown itself a fair one, neither more difficult nor less so than most paths in life in which a man of energy may hope to do much if he believes in himself, and is at peace within." Thus relieved in mind, he makes his decision in spite of adverse fate. "My course of life is taken, I will not leave London — I *will* make myself a name and a position as well as an income by some kind of pursuit connected with science which is the thing for which Nature has fitted me if she has ever fitted any one for anything."

But suddenly the long wait, the faith in self, were justified, and the turning point came. "There is always a Cape Horn in one's life that one either weathers or wrecks one's self on," he writes to his sister. "Thank God, I think I may say I have weathered mine — not without a good deal of damage to spars and rigging though, for it blew deuced hard on the other side." In 1854 a permanent lectureship was offered him at the Government School of Mines; also, a lectureship at St. Thomas' Hospital; and he was asked to give various other lecture courses. He thus found himself able to establish the home for which he had waited eight years. In July, 1855, he was married to Miss Heathorn.

The succeeding years from 1855 to 1860 were filled with various kinds of work connected with science: original investigation, printing of monographs, and establishing of natural history museums. His advice concerning local museums is interesting and characteristically expressed. "It [the local museum if properly arranged] will tell both natives and strangers exactly what they want to know, and possess great scientific interest and importance. Whereas the ordinary lumber-room of clubs from New Zealand,

Hindu idols, sharks' teeth, mangy monkeys, scorpions, and conch shells — who shall describe the weary inutility of it? It is really worse than nothing, because it leads the unwary to look for objects of science elsewhere than under their noses. What they want to know is that their 'America is here,' as Wilhelm Meister has it." During this period, also, he began his lectures to workingmen, calling them Peoples' Lectures. "*Popular* lectures," he said, "I hold to be an abomination unto the Lord." Workingmen attended these lectures in great numbers, and to them Huxley seemed to be always able to speak at his best. His purpose in giving these lectures should be expressed in his own words: "I want the working class to understand that Science and her ways are great facts for them — that physical virtue is the base of all other, and that they are to be clean and temperate and all the rest — not because fellows in black and white ties tell them so, but because there are plain and patent laws which they must obey 'under penalties.'"

Toward the close of 1859, Darwin's "Origin of Species" was published. It raised a great outcry in England; and Huxley immediately came forward as chief defender of the faith therein set forth. He took part in debates on this subject, the most famous of which was the one between himself and Bishop Wilberforce at Oxford. The Bishop concluded his speech by turning to Huxley and asking, "Was it through his grandfather or grandmother that he claimed descent from a monkey?" Huxley, as is reported by an eye-witness, "slowly and deliberately arose. A slight tall figure, stern and pale, very quiet and grave, he stood before us and spoke those tremendous words. . . . He was not ashamed to have a monkey for an ancestor; but he would be ashamed to be connected with a man who used great gifts to obscure the truth." Another story indicates the temper of that time. Carlyle, whose writing had strongly influenced Huxley, and whom Huxley had come to know, could not forgive him for his attitude toward evolution. One day, years after the publication of *Man's Place in Nature*, Huxley,

Attitude
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seeing Carlyle on the other side of the street, a broken, pathetic figure, walked over and spoke to him. The old man merely remarked, "You're Huxley, aren't you? the man that says we are all descended from monkeys," and passed on. Huxley, however, saw nothing degrading to man's dignity in the theory of evolution. In a wonderfully fine sentence he gives his own estimate of the theory as it affects man's future on earth. "Thoughtful men once escaped from the blinding influences of traditional prejudices, will find in the lowly stock whence man has sprung the best evidence of the splendour of his capacities; and will discover, in his long progress through the past, a reasonable ground of faith in his attainment of a nobler future." As a result of all these controversies on *The Origin of Species* and of investigations to uphold Darwin's theory, Huxley wrote his first book, already mentioned, *Man's Place in Nature*.

To read a list of the various kinds of work which Huxley was doing from 1870 to 1875 is to be convinced of his abundant energy and many interests. At about this time Huxley executed the plan which he had had in mind for a long time, the establishment of laboratories for the use of students. His object was to furnish a more exact preliminary training. He complains that the student who enters the medical school is "so habituated to learn only from books, or oral teaching, that the attempt to learn from things and to get his knowledge at first hand is something new and strange." To make this method of teaching successful in the schools, Huxley gave practical instruction in laboratory work to school-masters.

"If I am to be remembered at all," Huxley once wrote, "I would rather it should be as a man who did his best to help the people than by any other title." Certainly as much of his time as could be spared from his regular work was given to help others. His lectures to workingmen and school-masters have already been mentioned. In addition, he lectured to women on physiology and to children on elementary science. In order to be of greater service to

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the children, Huxley, in spite of delicate health, became a member of the London School Board. His immediate object was "to temper book-learning with something of the direct knowledge of Nature." His other purposes were to secure a better physical training for children and to give them a clearer understanding of social and moral law. He did not believe, on the one hand, in overcrowding the curriculum, but, on the other hand, he "felt that all education should be thrown open to all that each man might know to what state in life he was called." Another statement of his purpose and beliefs is given by Professor Gladstone, who says of his work on the board: "He resented the idea that schools were to train either congregations for churches or hands for factories. He was on the Board as a friend of children. What he sought to do for the child was for the child's sake, that it might live a fuller, truer, worthier life."

The immense amount of work which Huxley did in these years told very seriously on his naturally weak constitution. It became necessary for him finally for two successive years to stop work altogether. In 1872 he went to the Mediterranean and to Egypt. This was a holiday full of interest for a man like Huxley who looked upon the history of the world and man's place in the world with a keen scientific mind. Added to this scientific bent of mind, moreover, Huxley had a deep appreciation for the picturesque in nature and life. Bits of description indicate his enjoyment in this vacation. He writes of his entrance to the Mediterranean, "It was a lovely morning, and nothing could be grander than Ape Hill on one side and the Rock on the other, looking like great lions or sphinxes on each side of a gateway." In Cairo, Huxley found much to interest him in archæology, geology, and the every-day life of the streets. At the end of a month, he writes that he is very well and very grateful to Old Nile for all that he has done for him, not the least "for a whole universe of new thoughts and pictures of life." The trip, however, did no lasting good. In 1873 Huxley was again very ill, but was under such heavy costs at this time that

Service to
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Vacations
abroad.

another vacation was impossible. At this moment, a critical one in his life, some of his close scientific friends placed to his credit twenty-one hundred pounds to enable him to take the much needed rest. Darwin wrote to Huxley concerning the gift: "In doing this we are convinced that we act for the public interest." He assured Huxley that the friends who gave this felt toward him as a brother. "I am sure that you will return this feeling and will therefore be glad to give us the opportunity of aiding you in some degree, as this will be a happiness to us to the last day of our lives." The gift made it possible for Huxley to take another long vacation, part of which was spent with Sir Joseph Hooker, a noted English botanist, visiting the volcanoes of Auvergne. After this trip he steadily improved in health, with no other serious illness for ten years.

In 1876 Huxley was invited to visit America and to deliver the inaugural address at Johns Hopkins University. In July of this year accordingly, in company with his wife, he crossed to New York. Everywhere Huxley was received with enthusiasm, for his name was a very familiar one. Two quotations from his address at Johns Hopkins are especially worthy of attention as a part of his message to Americans. "It has been my fate to see great educational funds fossilise into mere bricks and mortar in the petrifying springs of architecture, with nothing left to work them. A great warrior is said to have made a desert and called it peace. Trustees have sometimes made a palace and called it a university."

The second quotation is as follows:—

I cannot say that I am in the slightest degree impressed by your bigness or your material resources, as such. Size is not grandeur, territory does not make a nation. The great issue, about which hangs true sublimity, and the terror of overhanging fate, is, what are you going to do with all these things? . . .

The one condition of success, your sole safeguard, is the moral worth and intellectual clearness of the individual citizen. Education cannot give these, but it can cherish them and bring them to the front in whatever station of society they are to be found, and the universities ought to be, and may be, the fortresses of the higher life of the nation.

After the return from America, the same innumerable occupations were continued. It would be impossible in short space even to enumerate all Huxley's various publications of the next ten years. His work, however, changed gradually from scientific investigation to administrative work, not the least important of which was the office of Inspector of Fisheries. A second important office was the Presidency of the Royal Society. Of the work of this society Sir Joseph Hooker writes: "The duties of the office are manifold and heavy; they include attendance at all the meetings of the Fellows, and of the councils, committees, and sub-committees of the Society, and especially the supervision of the printing and illustrating all papers on biological subjects that are published in the Society's Transactions and Proceedings; the latter often involving a protracted correspondence with the authors. To this must be added a share in the supervision of the staff officers, of the library and correspondence, and the details of house-keeping." All the work connected with this and many other offices bespeaks a life too hard-driven and accounts fully for the continued ill-health which finally resulted in a complete break-down.

Huxley had always advocated that the age of sixty was the time for "official death," and had looked forward to a peaceful "Indian summer." With this object in mind and troubled by increasing ill-health, he began in 1885 to give up his work. But to live even in comparative idleness, after so many years of activity, was difficult. "I am sure," he says, "that the habit of incessant work into which we all drift is as bad in its way as dram-drinking. In time you cannot be comfortable without stimulus." But continued bodily weakness told upon him to the extent that all work became distasteful. An utter weariness with frequent spells of the blues took possession of him; and the story of his life for some years is the story of the long pursuit of health in England, Switzerland, and especially in Italy.

Although Huxley was wretchedly ill during this period, he wrote letters which are good to read for their humor

and for their pictures of foreign cities. Rome he writes of as an idle, afternoony sort of place from which it is difficult to depart. He worked as eagerly over the historic remains in Rome as he would over a collection of geological specimens. "I begin to understand Old Rome pretty well and I am quite learned in the Catacombs, which suit me, as a kind of Christian fossils out of which one can reconstruct the body of the primitive Church." Florence, for a man with a conscience and ill-health, had too many picture galleries. "They are a sore burden to the conscience if you don't go to see them, and an awful trial to the back and legs if you do," he complained. He found Florence, nevertheless, a lovely place and full of most interesting things to see and do. His letters with reference to himself also are vigorously and entertainingly expressed. He writes in a characteristic way of his growing difficulty with his hearing. "It irritates me not to hear; it irritates me still more to be spoken to as if I were deaf, and the absurdity of being irritated on the last ground irritates me still more." And again he writes in a more hopeful strain, "With fresh air and exercise and careful avoidance of cold and night air I am to be all right again." He then adds: "I am not fond of coddling; but as Paddy gave his pig the best corner in his cabin — because 'shure, he paid the rint' — I feel bound to take care of myself as a household animal of value, to say nothing of other points."

Although he was never strong after this long illness, Huxley began in 1889 to be much better. The first sign of returning vigor was the eagerness with which he entered into a controversy with Gladstone. Huxley had always enjoyed a mental battle; and some of his fiercest tilts were with Gladstone. He even found the cause of better health in this controversy, and was grateful to the "Grand Old Man" for making home happy for him. From this time to his death, Huxley wrote a number of articles on politics, science, and religion, many of which were published in the volume called *Controverted Questions*. The main value of these essays lies in the fact that Huxley calls upon men to give clear reasons for the faith

Last
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which they claim as theirs, and makes, as a friend wrote of him, hazy thinking and slovenly, half-formed conclusions seem the base thing they really are.

The last years of Huxley's life were indeed the longed-for Indian summer. Away from the noise of London at Eastbourne by the sea, he spent many happy hours with old-time friends and in his garden, which was a great joy to him. His large family of sons and daughters and grandchildren brought much cheer to his last days. Almost to the end he was working and writing for publication. Three days before his death he wrote to his old friend, Hooker, that he did not feel at all like "sending in his checks" and hoped to recover. He died very quietly on June 29, 1895. That he met death with the same calm faith and strength with which he had met life is indicated by the lines which his wife wrote and which he requested to be his epitaph: —

Be not afraid, ye waiting hearts that weep;
For still He giveth His beloved sleep,
And if an endless sleep He wills, so best.

To attempt an analysis of Huxley's character, unique and bafflingly complex as it is, is beyond the scope of this sketch; but to give only the mere facts of his life is to do an injustice to the vivid personality of the man as it is revealed in his letters. All his human interest in people and things — pets, and flowers, and family — brightens many pages of the two ponderous volumes. Now one reads of his grief over some backward-going plant, or over some garden tragedy, as "A lovely clematis in full flower, which I had spent hours in nailing up, has just died suddenly. I am more inconsolable than Jonah!" Now one is amused with a nonsense letter to one of his children, and again with an account of a pet. "I wish you would write seriously to M——. She is not behaving well to Oliver. I have seen handsomer kittens, but few more lively, and energetically destructive. Just now he scratched away at something M—— says cost 13s. 6d. a yard and reduced more or less of it to combings.

Huxley's
human
interest.

M— therefore excludes him from the dining-room and all those opportunities of higher education which he would have in *my* house." Frequently one finds a description of some event, so vividly done that the mere reading of it seems like a real experience. An account of Tennyson's burial in Westminster is a typical bit of description:—

Bright sunshine streamed through the windows of the nave, while the choir was in half gloom, and as each shaft of light illuminated the flower-covered bier as it slowly travelled on, one thought of the bright succession of his works between the darkness before and the darkness after. I am glad to say that the Royal Society was represented by four of its chief officers, and nine of the commonalty, including myself. Tennyson has a right to that, as the first poet since Lucretius who has understood the drift of science.

No parts of the *Life and Letters* are more enjoyable than those concerning the "Happy Family," as a friend of Huxley's names his household. His family of seven children found their father a most engaging friend and companion. He could tell them wonderful sea stories and animal stories and could draw fascinating pictures. His son writes of how when he was ill with scarlet fever he used to look forward to his father's home-coming. "The solitary days— for I was the first victim in the family— were very long, and I looked forward with intense interest to one half-hour after dinner, when he would come up and draw scenes from the history of a remarkable bull-terrier and his family that went to the seaside in a most human and child-delighting manner. I have seldom suffered a greater disappointment than when, one evening, I fell asleep just before this fairy half-hour, and lost it out of my life."

The account of the comradeship between Huxley and his wife reads like a good old-time romance. He was attracted to her at first by her "simplicity and directness united with an unusual degree of cultivation," Huxley's son writes. On her he depended for advice in his work, and for companionship at home and abroad when wandering in search of health in Italy and Switzerland. When he had been separated from her for some time, he wrote,

"Nobody, children or anyone else, can be to me what you are. Ulysses preferred his old woman to immortality, and this absence has led me to see that he was as wise in that as in other things." Again he writes, "Against all trouble (and I have had my share) I weigh a wife-comrade 'trew and fest' in all emergencies."

The letters also give one a clear idea of the breadth of Huxley's interests, particularly of his appreciation of the various forms of art. Huxley believed strongly in the arts as a refining and helpful influence in education. He keenly enjoyed good music. Professor Hewes writes of him that one breaking in upon him in the afternoon at South Kensington would not infrequently be met "with a snatch of some melody of Bach's fugue." He also liked good pictures, and always had among his friends well-known artists, as Alma-Tadema, Sir Frederick Leighton, and Burne-Jones. He read poetry widely, and strongly advocated the teaching of poetry in English schools. As to poetry, his own preferences are interesting. Wordsworth he considered too discursive; Shelley was too diffuse; Keats, he liked for pure beauty, Browning for strength, and Tennyson for his understanding of modern science; but most frequently of all he read Milton and Shakespeare.

As to Huxley's appearance, and as to the impression which his personality made upon others, the description of a friend, Mr. G. W. Smalley, presents him with striking force. "The square forehead, the square jaw, the tense lines of the mouth, the deep flashing dark eyes, the impression of something more than strength he gave you, an impression of sincerity, of solid force, of immovability, yet with the gentleness arising from the serene consciousness of his strength— all this belonged to Huxley and to him alone. The first glance magnetized his audience. The eyes were those of one accustomed to command, of one having authority, and not fearing on occasion to use it. The hair swept carelessly away from the broad forehead and grew rather long behind, yet the length did not suggest, as it often does, effeminacy. He was masculine

in everything — look, gesture, speech. Sparing of gesture, sparing of emphasis, careless of mere rhetorical or oratorical art, he had nevertheless the secret of the highest art of all, whether in oratory or whatever else — he had simplicity."

Simplicity, directness, sincerity, — all these qualities describe Huxley; but the one attribute which distinguishes him above all others is love of truth. A love of truth, as the phrase characterizes Huxley, would necessarily produce a scholarly habit of mind. It was the zealous search for truth which determined his method of work. In science, Huxley would "take at second hand nothing for which he vouched in teaching." Some one reproached him for wasting time verifying what another had already done. "If that is his practice," he commented, "his work will never live." The same motive made him a master of languages. To be able to read at first hand the writings of other nations, he learned German, French, Italian, and Greek. One of the chief reasons for learning to read Greek was to see for himself if Aristotle really did say that the heart had only three chambers — an error, he discovered, not of Aristotle, but of the translator. It was, moreover, the scholar in Huxley which made him impatient of narrow, half-formed, foggy conclusions. His own work has all the breadth and freedom and universality of the scholar, but it has, also, a quality equally distinctive of the scholar, namely, an infinite precision in the matter of detail.

If love of truth made Huxley a scholar, it made him, also, a courageous fighter. Man's first duty, as he saw it, was to seek the truth; his second was to teach it to others, and, if necessary, to contend valiantly for it. To fail to teach what you honestly know to be true, because it may harm your reputation, or even because it may give pain to others, is cowardice. "I am not greatly concerned about any reputation," Huxley writes to his wife, "except that of being entirely honest and straightforward." Regardless of warnings that the publication of *Man's Place in Nature* would ruin his career,

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Huxley passed on to others what nature had revealed to him. He was regardless, also, of the confusion and pain which his view would necessarily bring to those who had been nourished in old traditions. To stand with a man or two and to do battle with the world on the score of its old beliefs, has never been an easy task since the world began. Certainly it required fearlessness and determination to wrestle with the prejudices against science in the middle of the nineteenth century — how much may be gathered from the reading of Darwin's *Life and Letters*. The attitude of the times toward science has already been indicated. One may be allowed to give one more example from the reported address of a clergyman. "O ye men of science, ye men of science, leave us our ancestors in paradise, and you may have yours in Zoölogical gardens." The war was, for the most part, between the clergy and the men of science, but it is necessary to remember that Huxley fought not against Christianity, but against dogma; that he fought not against the past, — he had great reverence for the accomplishment of the past, — but against unwillingness to accept the new truth of the present.

A scholar of the highest type and a fearless defender of true and honest thinking, Huxley certainly was: but the quality which gives meaning to his work, which makes it live, is a certain human quality due to the fact that Huxley was always keenly alive to the relation of science to the problems of life. For this reason, he was not content with the mere acquirement of knowledge; and for this reason, also, he could not quietly wait until the world should come to his way of thinking. Much of the time, therefore, which he would otherwise naturally have spent in research, he spent in contending for and in endeavoring to popularize the facts of science. It was this desire to make his ideas prevail that led Huxley to work for a mastery of the technique of speaking and writing. He hated both, but taught himself to do both well. The end of all his infinite pains about his writing was not because style for its own sake is worth while, but because he saw that the only way to win men to a consid-

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eration of his message was to make it perfectly clear and attractive to them. Huxley's message to the people was that happiness, usefulness, and even material prosperity depend upon an understanding of the laws of nature. He also taught that a knowledge of the facts of science is the soundest basis for moral law; that a clear sense of the penalties which Nature inflicts for disobedience of her laws must eventually be the greatest force for the purification of life. If he was to be remembered, therefore, he desired that he should be remembered primarily as one who had helped the people "to think truly and to live rightly." Huxley's writing is, then, something more than a scholarly exposition of abstruse matter; for it has been further devoted to the increasing of man's capacity for usefulness, and to the betterment of his life here on earth.

II

SUBJECT-MATTER, STRUCTURE, AND STYLE

From the point of view of subject-matter, structure, and style, Huxley's essays are admirably adapted to the uses of the student in English. The themes of the essays are two, education and science. In these two subjects Huxley earnestly sought to arouse interest and to impart knowledge, because he believed that intelligence in these matters is essential for the advancement of the race in strength and morality. Both subjects, therefore, should be valuable to the student. In education, certainly, he should be interested, since it is his main occupation, if not his chief concern. Essays like *A Liberal Education* and *The Principal Subjects of Education* may suggest to him the meaning of all his work, and may suggest, also, the things which it would be well for him to know; and, even more, a consideration of these subjects may arouse him to a greater interest and responsibility than he usually assumes toward his own mental equipment. Of greater interest probably will be the subjects which deal with nature; for the ways of nature are more nearly within

Education
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science.

the range of his real concerns than are the wherefores of study. The story of the formation of a piece of chalk, the substance which lies at the basis of all life, the habits of sea animals, are all subjects the nature of which is akin to his own eager interest in the world.

Undoubtedly the subjects about which Huxley writes will "appeal" to the student; but it is in analysis that the real discipline lies. For analysis Huxley's essays are excellent. They illustrate "the clear power of exposition," and such power is, as Huxley wrote to Tyndall, the one quality the people want,—exposition "so clear that they may think they understand even if they don't." Huxley obtains that perfect clearness in his own work by simple definition, by keeping steadily before his audience his intention, and by making plain throughout his lecture a well-defined organic structure. No X-ray machine is needful to make the skeleton visible; it stands forth with the parts all nicely related and compactly joined. In reference to structure, his son and biographer writes, "He loved to visualize his object clearly. The framework of what he wished to say would always be drawn out first." Professor Ray Lankester also mentions Huxley's love of form. "He deals with form not only as a mechanical engineer *in partibus* (Huxley's own description of himself), but also as an artist, a born lover of form, a character which others recognize in him though he does not himself set it down in his analysis." Huxley's own account of his efforts to shape his work is suggestive. "The fact is that I have a great love and respect for my native tongue, and take great pains to use it properly. Sometimes I write essays half-a-dozen times before I can get them into proper shape; and I believe I become more fastidious as I grow older." And, indeed, there is a marked difference in firmness of structure between the earlier essays, such as *On the Educational Value of the Natural History Sciences*, written, as Huxley acknowledges, in great haste, and the later essays, such as *A Liberal Education* and *The Method of Scientific Investigation*. To trace and to define this difference will be most helpful to

Clearness
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the student who is building up a knowledge of structure for his own use.

According to Huxley's biographer in the *Life and Letters of Thomas Henry Huxley*, the essays which represent him at his best are those published in 1868. They are *A Piece of Chalk*, *A Liberal Education*, and *On the Physical Basis of Life*. In connection with the comment on these essays is the following quotation which gives one interesting information as to Huxley's method of obtaining a clear style:—

This lecture on *A Piece of Chalk* together with two others delivered this year, seems to me to mark the maturing of his style into that mastery of clear expression for which he deliberately labored, the saying exactly what he meant, neither too much nor too little, without confusion and without obscurity. Have something to say, and say it, was the Duke of Wellington's theory of style; Huxley's was to say that which has to be said in such language that you can stand cross-examination on each word. Be clear, though you may be convicted of error. If you are clearly wrong, you will run up against a fact sometime and get set right. If you shuffle with your subject, and study chiefly to use language which will give a loophole of escape either way, there is no hope for you.

This was the secret of his lucidity. In no one could Buffon's aphorism on style find a better illustration, *Le style c'est l'homme même*. In him science and literature, too often divorced, were closely united; and literature owes him a debt for importing into it so much of the highest scientific habit of mind; for showing that truthfulness need not be bald, and that real power lies more in exact accuracy than in luxuriance of diction.

Huxley's own theory as to how clearness is to be obtained gets at the root of the matter. "For my part, I venture to doubt the wisdom of attempting to mould one's style by any other process than that of striving after the clear and forcible expression of definite conceptions; in which process the Glassian precept, first catch your definite conception, is probably the most difficult to obey."

Perfect clearness, above every other quality of style, certainly is characteristic of Huxley; but clearness alone does not make subject-matter literature. In addition to this quality, Huxley's writing wins the reader by the racy diction, the homely illustration, the plain, honest phrasing. All these and other qual-

Other
qualities
of style.

ities bring one into an intimate relationship with his subject. A man of vast technical learning, he is still so interested in the relation of his facts to the problems of men that he is always able to infuse life into the driest of subjects, in other words, to *humanize* his knowledge; and in the estimation of Matthew Arnold, this is the true work of the scholar, the highest mission of style.

III

SUGGESTED STUDIES IN SUBJECT-MATTER, STRUCTURE, AND STYLE

Although fully realizing that the questions here given are only such as are generally used everywhere by instructors in English, the editor has, nevertheless, included them with the hope that some one may find them helpful.

The studies given include a few general questions and suggestions on subject-matter, structure, and style. The questions on structure are based on an analysis of the whole composition and of the paragraph; those on style are based on a study of sentences and words. Such a division of material may seem unwarranted; for, it may be urged, firmness of structure depends, to a certain extent, upon sentence-form and words; and clearness of style, to a large extent, upon the form of the paragraph and whole composition. The two, certainly, cannot be in justice separated; and especially is it true, more deeply true than the average student can be brought to believe, that structure, "*mind*, in style" as Pater phrases it, primarily determines not only clearness, but also such qualities of style as reserve, refinement, and simple Doric beauty. Since, however, structure is more obviously associated with the larger groups, and style with the smaller, the questions have been arranged according to this division.

I. Suggestions for the Study of Subject-Matter.

1. To whom does Huxley address the essay?
2. Can you see any adaptation of his material to his audience?

3. How would *A Piece of Chalk* be differently presented if given before a science club?
4. Does Huxley make his subject interesting? If so, how does he accomplish this?
5. Is the personality of Huxley suggested by the essays? See *Life and Letters*, vol. ii, p. 293.

II. Suggestions for the Study of Structure.

A. Analysis of the whole composition.

1. State in one complete sentence the theme of the essay.
2. Analyze the essay for the logical development of the thought.
 - a. Questions on the Introduction.
In the introduction, how does the author approach his material?
Does he give the main points of the essay?
Does he give his reasons for writing?
Does he narrow his subject to one point of view?
Is the introduction a digression?
 - b. Questions on the Body.
Can you find large groups of thought?
Are these groups closely related to the theme and to each other?
Do you find any digressions?
Is the method used in developing the groups inductive or deductive?
Is the method different in different groups?
Are the groups arranged for good emphasis in the whole composition?
 - c. Questions on the Conclusion.
How does the author conclude the essay?
Does the conclusion sum up the points of the essay?
Are any new points suggested?
Is the thought of the whole essay stated?
Do you consider it a strong conclusion?

3. Make out an outline which shall picture the skeleton of the essay studied. In making the outline express the topics in the form of complete statements, phrase the thought for clear sequence, and be careful about such matters as spacing and punctuation.

B. Analysis of paragraph structure.

1. Can a paragraph be analyzed in the same manner as the whole composition?
2. Can you express the thought of each paragraph in a complete sentence?
3. Can you find different points presented in the paragraph developing the paragraph topic, as the large groups of the whole composition develop the theme?
4. Are the paragraphs closely related, and how are they bound together?
5. Can any of the paragraphs be combined to advantage?
6. Read from Barrett Wendell's *English Composition* the

chapter on paragraphs. Are Huxley's paragraphs constructed in accordance with the principles given in this chapter?

7. Is the paragraph type varied? For paragraph types, see Scott and Denny's *Paragraph Writing*.
- C. *Comparative study of the structure of the essay.*
 1. Do you find any difference between Huxley's earlier and later essays as regards the structure of the whole, or the structure of the paragraph?
 2. Which essay seems to you to be most successful in structure?
 3. Has the character of the audience any influence upon the structure of the essays?
 4. Compare the structure of one of Huxley's essays with that of some other essay recently studied.
 5. Has the nature of the material any influence upon the structure of the essay?

III. Suggestions for the Study of Style.

A. Exactly what do you mean by style?

B. Questions on sentence structure.

1. From any given essay, group together sentences which are long, short, loose, periodic, balanced, simple, compound; note those peculiar, for any reason, to Huxley.
2. Stevenson says, "The one rule is to be infinitely various; to interest, to disappoint, to surprise and still to gratify; to be ever changing, as it were, the stitch, and yet still to give the effect of ingenious neatness."
Do Huxley's sentences conform to Stevenson's rule? Compare Huxley's sentences with Stevenson's for variety in form. Is there any reason for the difference between the form of the two writers?
3. Does this quotation from Pater's essay on *Style* describe Huxley's sentences? "The blithe, crisp sentence, decisive as a child's expression of its needs, may alternate with the long-contending, victoriously intricate sentence; the sentence, born with the integrity of a single word, relieving the sort of sentence in which, if you look closely, you can see contrivance, much adjustment, to bring a highly qualified matter into compass at one view."

4. How do Huxley's sentences compare with those of Ruskin, or with those of any author recently studied?
5. Are Huxley's sentences musical? How does an author make his sentences musical?

C. Questions on words.

1. Do you find evidence of exactness, a quality which Huxley said he labored for?
2. Are the words general or specific in character?
3. How does Huxley make his subject-matter attractive?
4. From what sources does Huxley derive his words? Are they every-day words, or more scholarly in character?

5. Do you find any figures? Are these mainly ornamental or do they reënforce the thought?
 6. Are there many allusions and quotations? Can you easily recognize the source?
 7. Pater says in his essay on *Style* that the literary artist "begets a vocabulary faithful to the colouring of his own spirit, and in the strictest sense original." Do you find that Huxley's vocabulary suggests the man?
 8. Does Huxley seem to search for "the smooth, or winsome, or forcible word, as such, or quite simply and honestly, for the word's adjustment to its meaning"?
 9. Make out a list of the words and proper names in any given essay which are not familiar to you; write out the explanation of these in the form of notes giving any information which is interesting and relevant.
- D. *General questions on style.*
1. How is Huxley's style adapted to the subject-matter?
 2. Can you explain the difference in style of the different essays by the difference in purpose?
 3. Compare Huxley's way of saying things with some other author's way of saying things.
 4. Huxley says of his essays to workingmen, "I only wish I had had the sense to anticipate the run these have had here and abroad, and I would have revised them properly. As they stand they are terribly in the rough, from a literary point of view."
Do you find evidences of roughness?

THOMAS HENRY HUXLEY

AUTOBIOGRAPHY

And when I consider, in one view, the many things . . . which I have upon my hands, I feel the burlesque of being employed in this manner at my time of life. But, in another view, and taking in all circumstances, these things, as trifling as they may appear, no less than things of greater importance, seem to be put upon me to do. — *Bishop Butler to the Duchess of Somerset.*

THE "many things" to which the Duchess's correspondent here refers are the repairs and improvements of the episcopal seat at Auckland. I doubt if the great apologist, greater in nothing than in the simple dignity of his character, would have considered the writing an account of himself as a thing which could be put upon him to do whatever circumstances might be taken in. But the good bishop lived in an age when a man might write books and yet be permitted to keep his private existence to himself; in the pre-Boswellian epoch, when the germ of the photographer lay concealed in the distant future, and the interviewer who pervades our age was an unforeseen, indeed unimaginable, birth of time.

At present, the most convinced believer in the aphorism "Bene qui latuit, bene vixit," is not always able to act up to it. An importunate person informs him that his portrait is about to be published and will be accompanied by a biography which the importunate person proposes to write. The sufferer knows what that