

matter. Since this discovery, great advance has been made in the science of radiology, and in the practical application of this knowledge to human progress. In biology we are using this information to investigate problems of heredity, for in radium and X-rays we have powerful weapons with which we can actually alter the structure of chromosomes and so change the expected nature of offspring. The fact that these rays, if intensely used, will kill, has made them useful in treatment of cancer. Recently Milliken has discovered what he terms "cosmic rays." These are believed to come to us from outer space. They have a far greater penetrative power than any rays thus far discovered. We are constantly exposed to their action, but as yet we have no idea of their action on living substance. One of the problems awaiting biologists is to determine this. It has been suggested that the phenomena of degeneration accompanying old age, may in some way be associated with the lifelong bombardment to which we are subjected by cosmic rays. Be that as it may, it is "another story," not to be solved save through much labor.

Believing that it is sometimes well for us as teachers to pause and meditate, mayhap to dream in an orderly scientific manner, I have suggested a few of the fundamental laws of biology with their bearing on human life, both those whose operation, though indefinite, are yet deep in significance, and those whose understanding appears, because pertaining directly to our bodies, to be more immediately necessary. If this presentation in any way helps its readers to understand, or stimulates them to look further for biological help in living, it will have done its work.

RUTH L. PHILLIPS

In Nature there's no blemish but the mind; none can be called deformed but the unkind. Virtue is beauty.—SHAKESPEARE.

## JOSIAH HOLBROOK— FATHER OF THE LYCEUM

THE Lyceum is my pulpit," said Ralph Waldo Emerson in 1836 when asked to accept the pastorate of a leading Boston church. He referred to a system of lecturing before all sorts of audiences in all sorts of places that has in recent years become known as the American Lecture System.

The Lyceum was the invention of Josiah Holbrook of Derby, Connecticut, who spread his idea for "associations of adults for the purpose of self education" in October 1826 issue of the *American Journal of Education*. Holbrook was a graduate of Yale College, class of 1810, who in 1819 had started a school on his farm near Derby for boys, the first school in America where a popularized form of the natural sciences was taught, and where manual labor was combined with education. Poor boys were allowed to pay a part of their tuition by laboring on the farm.

But Holbrook himself was so interested in the study of geology that he soon forsook his school and began to study his favorite subject by tramping over most of New England, studying the rock formations and lecturing to whatever audiences would assemble in the Town Halls in the villages and hamlets through which he passed. He was immediately impressed by the hunger for information exhibited by nearly every man and woman that attended his lectures. Intellectual hunger peered from their eyes night after night, and it bothered him to such an extent that he began to wonder if something could be done about it. A typical Yankee was this man Holbrook—and a born educator, too.

A plan took form and finally found its way on paper, but that didn't help much. It only served to crystalize the plan more fully in Holbrook's own mind. He finally

decided that the way to start a movement is to start it. After lecturing on geology in the little Town Hall at Middlebury, Mass., he outlined his plan to the forty farmers and mechanics that composed his audience, and asked them if they wished to do anything about it. Enthusiastically and unanimately they responded, and the organization formed that November night in 1826 was called "Middlebury Branch Number One of the American Lyceum."

After the Middlebury experience, Holbrook formed a town Lyceum in every village he visited, but soon realized that he needed help if this movement was to become the influence that he had hoped for it. Boston was then the intellectual and cultural capital of the country, and Holbrook laid siege to it. In November, 1830, as the result of his work, the Boston Lyceum was formed with Daniel Webster, then at the very pinnacle of his fame and power, as its president. The Lyceum was now news; it had been approved by cultured Boston; it was now quite the thing to belong to a Lyceum. Important people in every community now were willing to sponsor the new movement. And it grew by leaps and bounds. Massachusetts, dissatisfied with the slow progress of the movement, formed a State Lyceum Board whose duty it was to speed up the formation of Town and County Lyceums in order that the state might have the honor of forming the first State Lyceum. But New York State beat Massachusetts by six weeks, and Florida quickly followed with the third state organization.

The New York State Lyceum Association immediately issued a call for a National Lyceum Convention. It met in the Court Room of the City Hall Building, New York City, on May 4, 1831, with delegates representing more than one thousand town Lyceums. And with the holding of this national convention amidst great enthusiasm, the movement started by Josiah

Holbrook in November, 1826, could rightly lay claim to being a genuinely national movement for adult self education.

#### *Holbrook's Plan*

But what did these Lyceums do? Holbrook's plan was most comprehensive. It provided for the formation of an association of adults in every town, city, village, or community, which would be called a "Lyceum." He obtained the name from the Greek Lyceum, originally a grove near Athens with tree-shaded walks consecrated to the Lycian Apollo, whose surname was Lykios, "the wolf-slayer." Here, Aristotle daily wandered up and down, teaching philosophy, slaying the wolves of ignorance. Holbrook hoped to do the same thing with his Lyceums. They were to be organized in towns, in counties, in states, in nation—and then there was to be an International Lyceum, of which Chancellor Brougham, of England, was to be the president, with fifty-two vice-presidents, one for each nation—a sort of League of Nations Lyceum!

From 1826 to 1845, more than three thousand town Lyceums were organized from Maine to Florida and as far west as Illinois.

And what were these organizations to do? It was so simple that at first the plan seemed unimportant to many people. The people of every community were to assemble in the Town Hall or other place of assemblage once a week and those who could, because of superior knowledge, should impart their superior knowledge to their fellow-townsmen. Debates became frequent. If a member of a community took a trip to Boston or to New York, and especially if it were a trip to Europe, he was expected to benefit his townspeople as well as he could by telling about it. There were readings of essays, books, poems, discussions of town problems, national politics, in fact, almost everything was grist for their intellectual mills.

And then the people grew tired of hear-

ing only the home voices. At first the imported speakers weren't imported from very far away; they were men (and later, after Lucy Stone and others had broken the ice, women spoke too) from nearby towns who had made reputations for themselves as interesting speakers. These Lyceums afforded excellent training quarters for would-be orators and lecturers. Soon a few men had achieved fame as lecturers and they became so in demand that they were compelled to ask a fee.

Ralph Waldo Emerson became the first outstanding lecturer, and all his essays after the thin volume (*Nature*), were written for lecturing purposes and delivered many times before they were put between the covers of a book. He gave solidity and intellectual strength to this movement. But he did not long hold the platform alone. Henry D. Thoreau, a fellow Concordite, began lecturing in the late thirties. John B.

than a score of equally famous men. Among the women of that early day who spoke to large audiences were Lucy Stone, Elizabeth Cady Stanton, Anna Dickinson, Julia Ward Howe.

*Where Is Holbrook's Lyceum Now?*

It isn't possible to trace the development of this movement to the present within the bounds of this short article. To do so would require the writing of a fairly large book. Hundreds of the most famous men and women of the past one hundred years have taken part in the development of the movement—a movement that has spread into the smallest towns and that permeates all of our largest cities.

The many series of lectures of an informational character that are offered in every community are all offspring of this movement, no matter by what name they are called. The more than two hundred lectures presented each season in the heart of

OUTSTANDING MEN AND WOMEN WHO HAVE SPOKEN IN THE AMERICAN LECTURE SYSTEM WITHIN THE PAST ONE HUNDRED YEARS

Lyman Abbott	Princess DerLing	George Kennan
Jane Addams	Charles Dickens	Stephen Leacock
Louis Agassiz	Arthur Conan Doyle	Gen. Fitzhugh Lee
Roald Amundsen	John Drinkwater	Abraham Lincoln
Sir Edwin Arnold	Will Durant	Henry W. Longfellow
Clara Barton	Edward Eggleston	Horace Mann
Henry Ward Beecher	Ralph Waldo Emerson	Thomas R. Marshall
James G. Blaine	Guglielmo Ferrero	Fritjof Nansen
Edward Bok	John Fiske	James Whitcomb Riley
Phillips Brooks	Glenn Frank	Henry W. Stanley
William Cullen Bryant	Eugene Field	William H. Taft
James Bryce	John Galsworthy	William M. Thackeray
Gilbert K. Chesterton	Horace Greeley	Mark Twain
Rufus Choate	Henry W. Grady	Henry van Dyke
Winston S. Churchill	John Temple Graves	Hugh Walpole
Irvin S. Cobb	Joel Chandler Harris	Woodrow Wilson
Charles A. Dana	Mark Hopkins	John Sharp Williams
Chauncey M. Depew	David Starr Jordan	Daniel Webster

Gough followed, and then a whole galaxy of stars made their appearance, including Wendell Phillips, Edward Everett, Daniel Webster, George William Curtis, E. P. Whipple, Henry Barnard, Oliver Wendell Holmes, Bayard Taylor, James Russell Lowell, Edward Everett Hale, and more

the theatrical district of New York City by the Town Hall is one of the best illustrations of Holbrook's original idea fully carried out and completely adapted to the present time. Similar work is to be found in nearly all of our colleges and universities, in places like the Brooklyn Institute of Arts

and Sciences, Philadelphia Forum, Goodwyn Institute, Lowell Institute, Cooper Union, and their prototypes in all parts of America. The University Extension movement is Holbrook's plan carried out by a University. The Chautauquas are Holbrook's Lyceum dressed in summer clothes. The Institute of Politics at Williamstown, Mass., and similar organizations are unconsciously doing the thing that Holbrook advocated for his International Lyceum.

A great-granddaughter of Josiah Holbrook told me a few weeks ago that when Holbrook's young wife died in 1820, he stood at her grave and sang her favorite hymn—and was never known to sing again. I believe that the loneliness of his heart and the affection he would have given to her had she lived, has found overflowing expression in the movement he started a century ago, a movement that has enriched the spiritual, intellectual, and cultural life of all America for a hundred years. His work sang for him. And it is still singing in the hearts of people every day, in our busy cities, as well as in the small villages and hamlets stretched from the Yukon to the Mississippi Delta and from Hawaii to the easternmost point of Maine.

LOUIS J. ALBER

## UNCONQUERED FRONTIERS

**G**EOGRAPHICAL frontiers have vanished, but an unconquered frontier exists wherever knowledge and practice based on knowledge stop. To extend the frontier of knowledge and practice in the care of children was the purpose of the recent White House Conference on Child Health and Protection called by President Hoover." In these words, Secretary of the Interior Ray Lyman Wilbur, the Chairman of the Conference, challenges citizens to see to it that childhood in the United States shall profit by the most extensive and profound single effort ever

made by a nation for the health and protection of its children.

Pushing back the borders of the unknown in helping each child to develop to the full his abilities and character was the task of the Conference. In the spirit of pioneers the 1200 members not only gathered existing knowledge but undertook many original studies of influences affecting the development of children in our complex industrial civilization. The Medical Section's report will not be complete until February, 1931, so extensive is its investigation of the dependence of the child's physical condition on that of its parents, and of the interrelation between physical care and mental and emotional development.

Just how American children are going to develop into healthy citizens when at least 1,500,000 children every year are reported as suffering from a communicable, which in most cases means a preventable, disease, was one of the questions raised by modern pioneers in the Public Health Section of the Conference. Fifteen per cent of the total deaths in this country every year are caused by such diseases. Of the million children with weak or damaged hearts, of the hundreds of thousands with impaired hearing and the thousands with defective eyesight, many have become thus handicapped as a result of communicable diseases. From fifty to seventy-five per cent of the nation's crippled children owe their condition to infantile paralysis and tuberculosis. In the prevention and control of communicable disease there are still frontiers to be conquered.

Other evidence of inadequate public health measures in many sections of the country, especially in rural districts and small communities, exists in the record of two hundred and fifty-eight milk-borne epidemics during the past six years. The children of the nation are not yet protected as they can be from such diseases as typhoid fever, scarlet fever, septic sore throat, and