Report of The VIRGINIA MUSEUM OF SCIENCE Study Commission 1969

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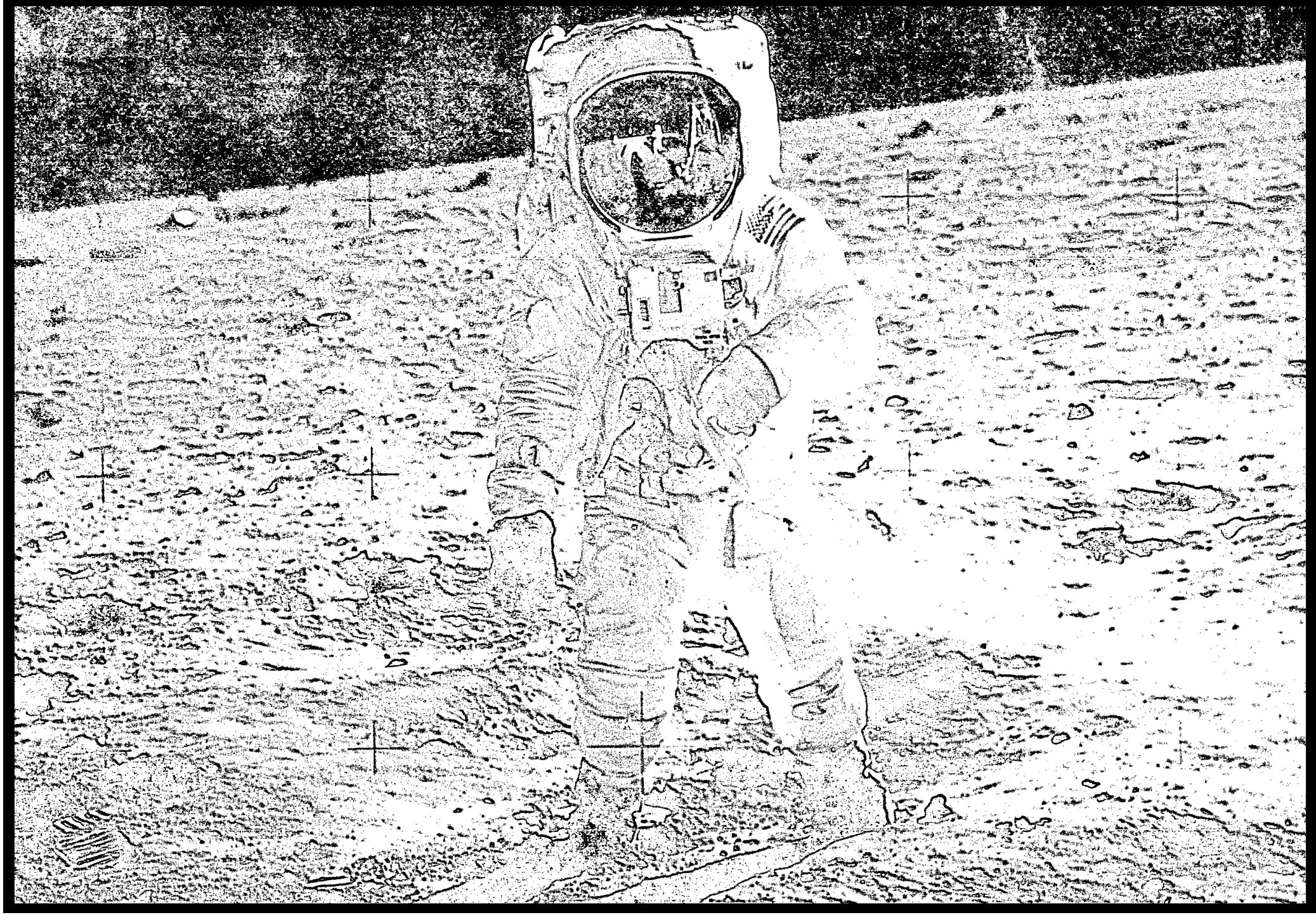


I. INTRODUCTION

ACKNOWLEDGMENTS

The individuals who made substantial contributions to this report actually number in the hundreds—many of whom did so unknowingly. It is patently impractical to recognize the contributions of each of them. The Commission therefore resorts to recognizing a few individuals and organizations who have given generously of their time, talents, or financial support. The Virginia Academy of Science deserves immense credit for vigorously backing the concept of a Virginia Science Museum during several past administrations of that organization as well as the present one, and also for making a substantial financial contribution available to the Study Commission.

The Commission also wishes to express its gratitude to the Virginia Nurserymen's Association for its enthusiastic support and encouragement, and to the Virginia Agriculture Foundation for a very generous financial gift and for its understanding of the need for a museum of science on a state level.

The Commission takes pride in naming the following who have lent encouragement as well as financial assistance to the Commission.

Mrs. William T. Reed, Jr., of Sabot
Mrs. Jan Laverge of Richmond
Brigadier General Edwin Cox, USA (Ret.) of Aylett

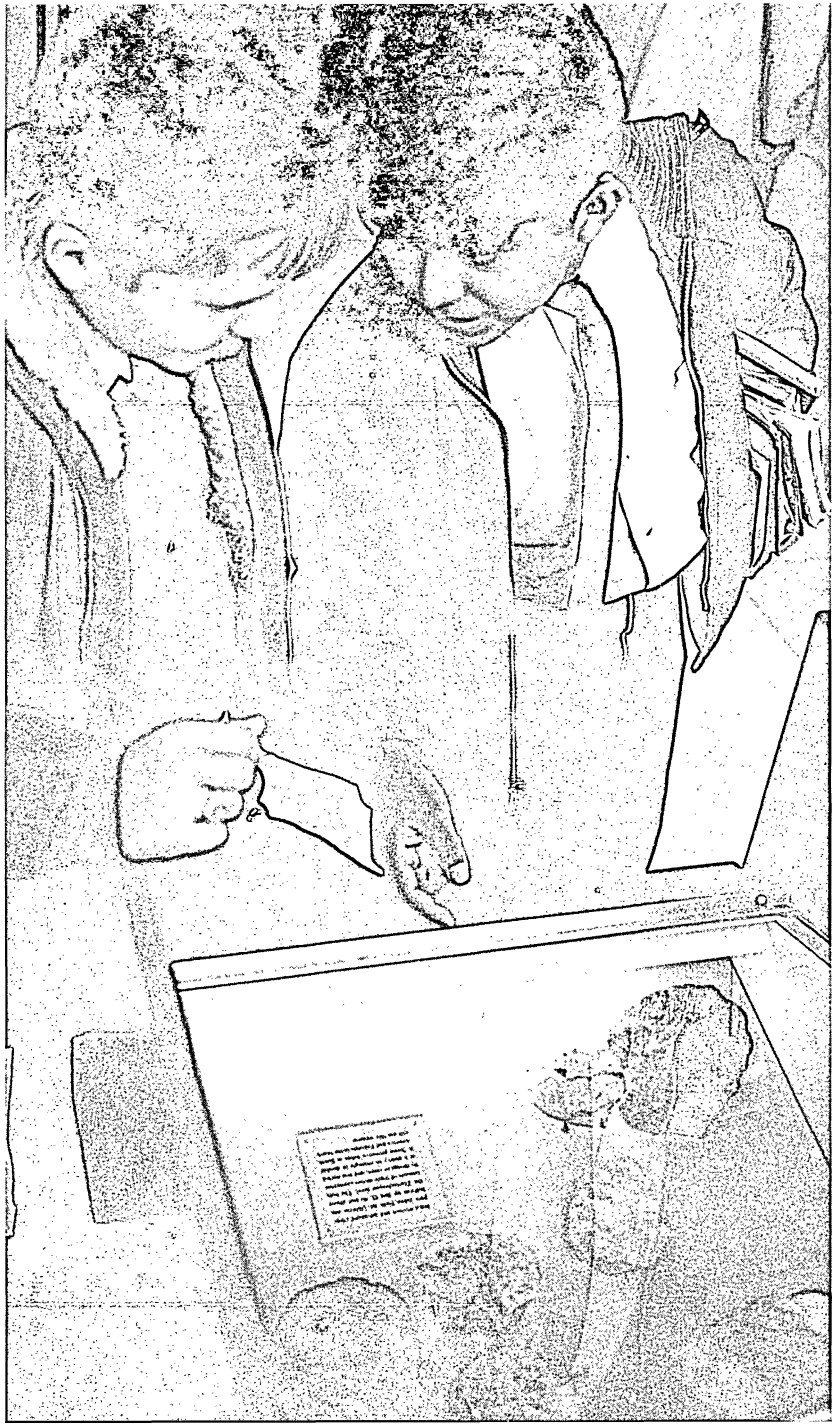
The Science Departments of the University of Richmond
The Department of Natural Sciences, Longwood College.

The Commission also wishes to acknowledge the expert assistance of Hyland and Highfill Associated Architects of Richmond in the early planning stages of this report.

Wildman S. Kincheloe, Jr., of the Division of Statutory Research and Drafting headed the secretariat of the Commission. To him the Commission is indebted for the efficient and cheerful manner in which he performed his duties.

The Visual Education Department of the Health Sciences Division of Virginia Commonwealth University made possible the design and the illustrations contained in this report. This Department is headed by Melvin C. Shaffer and its Medical Art Section by Nicholas E. Mackovak. The Commission expresses its thanks to both of these gentlemen for giving freely of their time and talent.

Lastly, very special thanks are due to Anna Efford Bryant of the Visual Education Department of the Health Sciences Division of the Virginia Commonwealth University for the design and execution of the illustrations, and to Michael Gaspeny, writer, University of Richmond, for a major role in the preparation of this report.



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THE PURPOSE OF THE SCIENCE MUSEUM OF VIRGINIA

To deepen our understanding of man and his environment; to promote a knowledge of the scientific method and thus encourage objectivity in the everyday affairs of man; to educate citizens of all ages in the concepts and principles of science and how these concepts and principles form the foundation upon which rests our technological society and its economy; to motivate and stimulate young people to seek careers in science; to encourage an understanding of the history of scientific endeavor; to provide special facilities and collections for the study of Virginia's natural resources; to foster a love of nature and a concern for its preservation.

RECOMMENDATIONS

NB—The phrase THE SCIENCE MUSEUM OF VIRGINIA as used in this report refers to the total state museum of science complex and would include regional science museums, if and when established, as well as the main or headquarters unit. The total complex would also include mobile units, ETV programming, the loan of exhibits and the like.

The type of organization of the various units required to make the system effective would be a duty of the Board of Trustees who could be expected to have statewide representation.

The phrase THE SCIENCE MUSEUM CENTER as used in this report refers to the main, or headquarters facility which eventually should have six divisions and be located in a central, populated area of the state.

That a science museum under state control be established that would be known as THE SCIENCE MUSEUM OF VIRGINIA

That THE SCIENCE MUSEUM OF VIRGINIA be one of quality as befits the status and traditions of Virginia

That THE SCIENCE MUSEUM OF VIRGINIA be so organized and administered that it will serve all regions of Virginia

That a basic function of THE SCIENCE MUSEUM OF VIRGINIA be to complement science education at all levels of learning from the elementary school through the university

That THE SCIENCE MUSEUM OF VIRGINIA be financed primarily by the State in the initial stages and increasingly in later stages by private citizens, private foundations, admission charges, local and federal sources

That THE SCIENCE MUSEUM OF VIRGINIA emphasize the history of science as appropriate, but that a special division of history, encompassing all aspects of that subject, not be included

That THE SCIENCE MUSEUM OF VIRGINIA be an autonomous institution governed by a Board consisting of seven trustees appointed by the Governor as set forth in the recommended enabling legislation on page 30 of this report

That first priority be given to the establishment of a museum headquarters, or THE SCIENCE MUSEUM CENTER in a centrally located and populous area of the State

That THE SCIENCE MUSEUM CENTER coordinate, on the basis of mutualism and upon invitation, science museum activities throughout the State, e.g., exchange of exhibits, educational programs and other services among local museums, local science centers, schools, colleges and universities

That THE SCIENCE MUSEUM CENTER incorporate the best features of traditional science museums and modern, dynamic science centers: on the one hand, by collecting, preserving, and exhibiting Virginia artifacts and natural objects, and encouraging

scholarly research on these collections; and, on the other hand, by making use of modern technology and special educational programs to show the dynamism of science

That THE SCIENCE MUSEUM CENTER by means of its professional staff, officers of administration, and other resources aid and encourage the establishment of local, regional museums as appropriate wherever local support and funds are available

That THE SCIENCE MUSEUM CENTER site be topographically suitable, appropriately located with relation to other cultural and educational institutions and of sufficient size—approximately 300 acres—to allow for eventual inclusion of all main divisions of science

PREVIOUS ATTEMPTS TO CREATE A STATE SCIENCE MUSEUM

Although Virginia has never had an official state science museum, there has been interest in such an institution since 1908. At that time, the General Assembly appropriated funds for an addition to the State Library Building (now the State Finance Building) in which to store the mineral and timber exhibits presented at the Jamestown exposition. Completed in 1910, this structure represented the first action toward the creation of a state exhibits center. Administered by the Conservation and Development Commission, the center was later to occupy the basement of the State Finance Building. In 1942 the Museum of Science Advisory Commission was appointed "to study and report on the advisability of establishing a Museum of Science in the State of Virginia." This commission, in its 1943 report, described the basement "museum" as a "sort of orphan child, neglected and forgotten" and "awkwardly and inadequately housed."

Efforts to create a modern, non-mausoleum type museum began with this 1943 report. It recommended that, following World War II, "the State of Virginia establish an independent institution . . . to be known as the Virginia Museum of Science, to incorporate within the new agency the exhibits and resources of the present State museum . . ." Then, in 1946, the General Assembly adopted a bill making the establishment of the recommended museum contingent on the availability of more space in the Finance Building. This stipulation was, however, repealed by the 1964 General Assembly. The basement center was dissolved and its collections distributed to other institutions for safekeeping and use, but on condition that they could be reclaimed for exhibit in a museum that might be established in the future.

In 1964 the General Assembly directed the Department of Conservation and Economic Development "to make a study and

to offer a plan for the encouragement or establishment of a properly located, designed, and operated museum of science, archaeology, and natural history . . ." The Governor was authorized to name a nine-member advisory committee to assist in this study. Appointed by Governor Harrison, the committee recommended the creation of a study commission to investigate the museum's feasibility more fully. It was urged that this commission be composed of "representatives of professional and scientific disciplines expected to be in the areas of the Science Museum's activities" and that this body be allotted $50,000 for its work.

A bill was introduced to effectuate this recommendation and was referred to the House Rules Committee, but was never reported out. This outcome was probably due to the lack of a legislative sponsor and the absence of a concerted effort on the proposal's behalf by the citizens of Virginia.

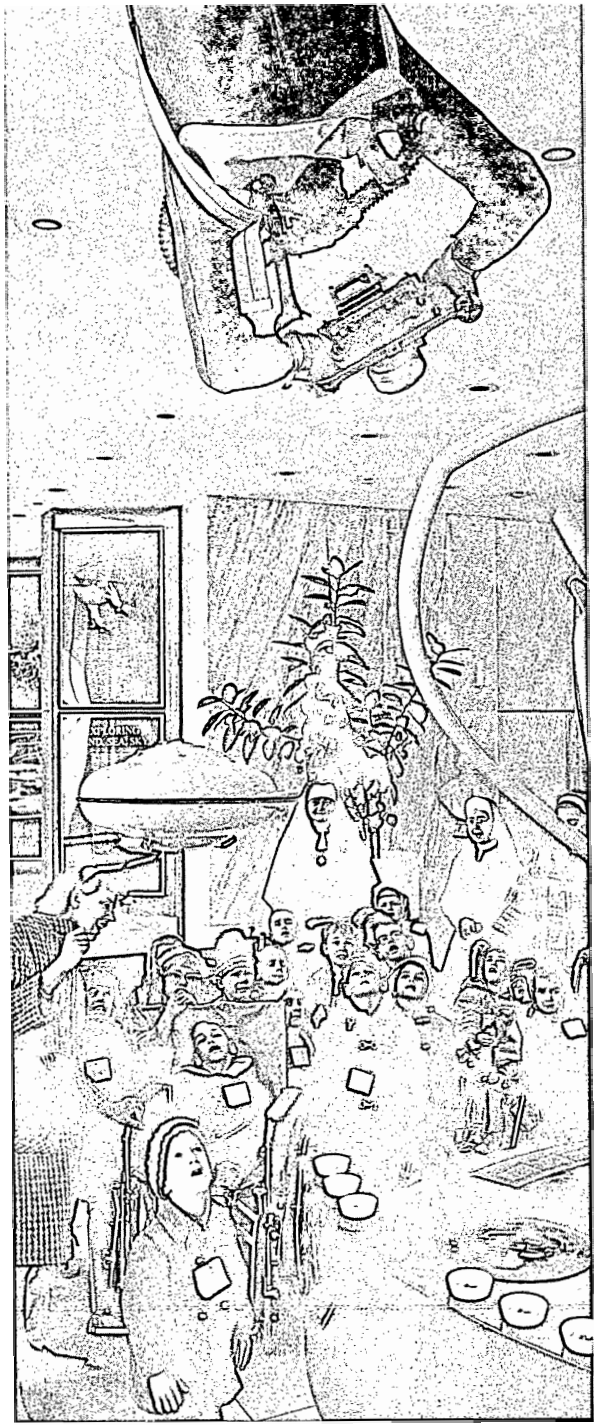
THE 1943 MUSEUM OF SCIENCE ADVISORY COMMISSION REPORT

The report submitted to the General Assembly by the 1943 Museum of Science Advisory Commission reveals a prophetic insight into Virginia's science needs. Its validity has been tested by twenty-six years and has proved remarkably relevant to the state's present science picture. The type of museum and the activities envisioned therein is in consonance with the independently reached recommendations of the present report.

Recognizing the great influence a museum would have in advancing science throughout the state, the Commission called for "a museum worthy of the dignity and history of our great Commonwealth." A dynamic museum was foreseen with the emphasis on public service: "A modern museum of science has become a real science center, a veritable beehive of activity for all classes. This means . . . boys and girls making their first vital contacts with the larger realm of science . . . adult education at its best, methods of cooperation with the educational systems from the kindergarten to the graduate school . . ."

Moreover, the Advisory Commission understood the variety of services to Virginia that would be performed by such a vital museum. The 1943 report emphasized the museum's role in promoting the study and conservation of natural resources to the end that ". . . the rising generation . . . be rightly oriented and made to take a fine pride in its native state . . ." In regard to Virginia's students, it is maintained that a state science museum would prevent the loss of promising young citizens to other states through "the cultivation of State pride and the realization of opportunities which it offers to those who stand by." In terms of commerce, the Commission contended that a museum would serve as a display center for Virginia's natural resources, thereby giving visitors "the most effective introduction to our various resources and industries" and encouraging travel in the Commonwealth.

Most importantly, a science museum was viewed in the report as a symbol of renaissance of science in Virginia, enabling the state ". . . to hold and attract the largest number of best minds as a further guarantee of essential leadership."



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II. THE NEED FOR A STATE SCIENCE MUSEUM

WHAT A SCIENCE MUSEUM OFFERS CHILDREN

Perhaps the most important asset of a science museum lies in its magnetic attraction for the young. Besides unique collections and facilities, a good museum boasts professional talent and flexibility of presentation. For these reasons, schools are eager to expose their children to the museum environment. Exhibits, demonstrations, lectures, films, and tours generally make up the museum's life and, today in Virginia, the museum's life can become a part of virtually every classroom by the use of ETV. In addition, publicly owned museums institute special programs in conjunction with schools as a supplement to classroom education. A good science museum thus acts as an influential means of interesting children in science.

THE MUSEUM'S ROLE IN MOTIVATING THE YOUNG

Why does a museum appeal to children? Because it exposes them to the new, unique, and exciting by presenting science imaginatively. Specialists strive to capture the interest of the young visitor; for the museum experience widens a child's perspective on his world and the universe as past, present, and future converge. A paleontological exhibit, for instance, may admit the child to an alien realm of the past just as a demonstration stressing the necessities of conservation may give him insight into contemporary problems. Under the dome of a planetarium, the young visitor may receive a glimpse of man's future, or of the heavens 20,000 years ago.

By motivating the young, a science museum can make an invaluable contribution to its community and state since its activities are designed to generate interest in scientific knowledge. By appealing to a child's zest for participation, do-it-yourself exhibits involve the young directly in science. Such involvement, promoted by many other activities as well, can have a profound influence on a child's future education. All types of children benefit from the museum experience. For those who are uninspired by science, a museum's exhibits can awaken the learning impulse and spark an abiding interest in science. For children whose careers will follow other directions, museum exposure can broaden the range of their knowledge. Moreover, to the science-oriented young, a museum visit represents an adventure that can deepen the desire for greater understanding. A science museum offers children a variety of activities and opportunities for learning areas in which they might otherwise be deprived.

Science attempts to impress upon the young the importance of careful, objective reasoning. Implanted by classroom experience, this lesson is emphasized by a museum's presentations. Through demonstrations stressing the difference between illusion and reality the young are encouraged to use logic in solving everyday problems. During such a complex age, when so many divisive factions are competing to claim young minds, there is an urgent need for rational thinking. Exposure to science trains children to become careful observers and analytical thinkers. It teaches them to separate myth from truth. A fundamental understanding of the laws of nature, for instance, can give children a basis with which to tackle many problems.

THE MUSEUM AS AN ADJUNCT TO EDUCATION

As shown in a recent (1969) survey of American museums conducted by the Department of Education (HEW), science museums are important adjuncts to classroom education. Working jointly with schools, science museums organize classes, clubs, and study groups for children of all ages. These programs reach vast numbers of the young and serve to introduce children to the museum environment. Under this type of program, over one hundred thousand preschool children alone annually visit the Museum of Science in Boston. The science horizons of young visitors are broadened immeasurably by contact with the museum.

The variety of programs sponsored by better institutions exemplifies the vitality of the modern science museum. For example,

the Oregon Museum of Science and Industry in Portland provides an impressive range of activities for both public and private school students of all ages. For children six to eight, there is a special class in scientific reasoning; it uses fingerprints, microscopes, disappearing inks and other devices to teach the importance of reasoning logically. Older children attend diverse classes, including stonecutting, astronomy, and radio construction. Activities are not confined to the museum, for fossil hunts, marine biology collecting trips, and wilderness hikes are organized. The modern science museum capitalizes on the remarkable promise of young people serving as on outlet for their energy and natural curiosity.

A MODERN SCIENCE MUSEUM AND ITS WORK WITH THE DISADVANTAGED

Within the last decade or so, the science museum has shifted from a static position to the role of an active cultural influence. Instead of existing for a few patrons or scholars, today's museum has widened its role to include community service as part of its responsibility. A state museum reaches each section of the community and all areas of the state in its activities. Slums, suburbs and rural corners are now served by science museums. Mobile exhibits, neighborhood museum outlets, and the increasing use of ETV have made such efforts fruitful.

This transition is particularly apparent in the museum's projects to aid the culturally deprived. Many urban school systems depend on the science museum to help motivate disadvantaged students. Schools and museums work jointly to introduce the young to the museum environment. For example, organized group attendance of school children of all cultural backgrounds at Chicago's Field Museum increased from 228,000 in 1964 to 315,000 in 1966. Some institutions like the Museum of Arts and Sciences in Rochester, channel exhibits into settlement centers and provide volunteers for instruction. Work-study programs have been instituted by museums in collaboration with schools and federal agencies. The New York Botanical Garden offers a gardener training program to students from a Bronx high school. This service could not be undertaken by any other urban institution. Such efforts show that science museums are increasingly attuned to the needs of contemporary society.

JOINT PROGRAMS WITH COLLEGES AND UNIVERSITIES

In concert with colleges and universities, the museum opens its facilities for special classes. A planetarium, for instance, may be used to conduct astronomy courses. Students often gain access to a wealth of collections of native flora, fauna, archeological specimens, minerals and the like. Colleges are especially interested in working with science museums and the range of classes may be wide. The American Museum of Natural History, for example, offered nineteen different courses to science majors at the City College of New York in 1968. Collections are regularly used for graduate and postgraduate research. Museums and universities find it mutually profitable to make joint staff appointments.

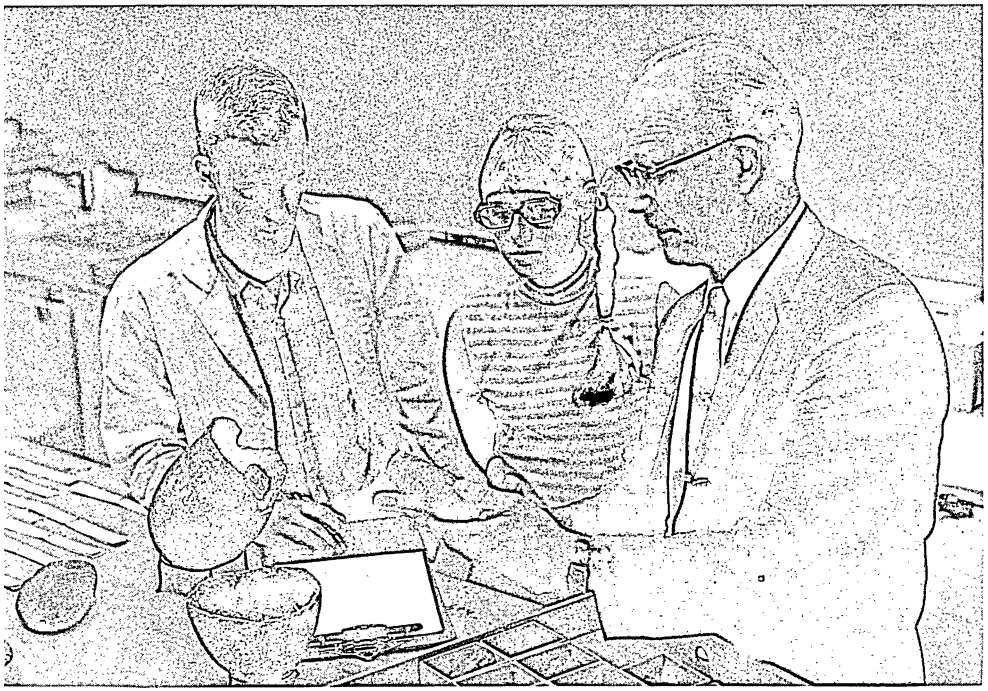


PHOTO: WIRT CHRISTIAN

Another valuable museum service is the sponsorship of summer study programs for high school science teachers. By appealing to every segment of the student population, pre-school to post-graduate, a science museum enhances the intellectual life of its community and state.

THE SCIENCE MUSEUM AND THE ADULT

The present is a point at which knowledge of the past and foreshadowing of the future meet. Science continually discovers more about the past and projects deeper into the future. Meanwhile, the adult feels overwhelmed by the knowledge explosion. No sooner does the public begin to comprehend the significance of Watson and Crick's model of DNA than the Apollo 11 crew takes the moon-walk. Such a scientifically fertile era challenges man's understanding. In order to keep pace with technological advances, an intelligent man must have a basic knowledge of science. The schools, of course, may have imparted this understanding, but it must be renewed and updated by other sources.

How can an adult benefit from contact with a science museum? Like a pleasurable pastime, a museum visit offers a change of pace from everyday life. Instead of mere diversion, however, it offers an opportunity for learning. The museum serves as a theater for science, dramatizing its progress and potential. Most importantly, it translates complexity into forms easily grasped.

A museum's activities—its exhibits, demonstrations, lectures, and films—clarify science, closing the distance between laboratory

and living room. A museum brings science into the public domain. By humanizing what seems isolated and complex, it performs an invaluable service in communication. A science museum is an information agency available to men and women from all walks of life. Reaching citizens of all ages, classes, and interests, a science museum extends pleasure and enlightenment to adults.

ECONOMIC ADVANTAGES OF A STATE SCIENCE MUSEUM

A quality science museum would have distinct economic advantages for Virginia. By supplementing the efforts of state schools, the museum would help raise the level of science education in Virginia. With stronger scientific backgrounds, state students would be better prepared for productive and lucrative technical careers. This eventuality would underscore the widely-accepted correlation between advanced education and economic prosperity. The more knowledge and skills an employee has the greater his earning power.

The economy of Virginia, of course, would ultimately benefit from improved science education. In effect, employees with a heightened scientific knowledge would make important contributions to the commonwealth's industries. In addition, accelerated industrial success in Virginia would encourage out-of-state industries to build here.

The creation of a state science museum would signify an intensification of interest in science for Virginia. It would symbolize a new era, a milestone in the life of Virginia science. By conveying a progressive science image, this commonwealth would encourage industrial growth. It is important to note that industries gravitate to areas technologically and scientifically oriented. Then, too, an environment conducive to scientific study would attract the best out-of-state students. A science museum would advance the intellectual reputation of this state.

This reputation would have a significant effect on Virginia's science-oriented students. Heretofore, Virginia has witnessed an emigration of many talented young students. These potential scientists often select areas offering a more suitable atmosphere for scientific study and greater opportunities for employment. What this "talent drain" costs Virginia economically is unknown, but many authorities believe the loss is vast.

A state science museum would constitute a major step toward alleviating this emigration. It would place a new emphasis on science in Virginia and create an environment favorable to these valuable citizens. A science museum would encourage scientific scholarship and achievement. The museum would function as an integral part of the budding scientists' education. Given a sense of scientific community, these promising citizens would be influenced to attend Virginia colleges and embark on careers with local industries. Such productive, well-educated residents would enrich Virginia economically and culturally.

ATTRACTION FOR OUT-OF-STATE VISITORS

Because of increased leisure time and rising interest in the arts

and sciences, America's museums are experiencing a boom in annual visits. Moreover, soaring attendance has become a strong economic stimulus in areas boasting important museums. In a survey conducted by the Chicago Chamber of Commerce, 72% of the polled visitors listed museums as their favorite attraction. The Chicago Museum of Science and Industry drew 3,000,000 visitors in 1966, a figure eclipsing the combined attendance totals from all Chicago's professional sports.

The Belmont Report, a study of American museums, explains their economic influence in this way:

> We are not accustomed to think of a museum as having economic value to a city or a nation. Museums are not established for this purpose. They develop economic value in spite of themselves. It becomes evident when business executives discover—as they have—that a city with good museums is a better place for them and their employees to live than a city without adequate museums. But the economic value of museums is most apparent in their contribution to tourism, which turns museums into a factor of considerable importance in the economic health of a city and a nation. . . .

A state science museum for Virginia would have national appeal. It would increase the number of out-of-state visitors traveling to Virginia. Since this commonwealth's tourist appeal is historically and recreationally oriented, a science museum would provide an excellent balance among attractions. Also, a state museum would act as a showplace for Virginia's natural resources. One visit would give the tourist a full picture of the state's natural attributes.

PHOTO: NATIONAL GEOGRAPHIC SOCIETY

III. SERVICES OF A QUALITY SCIENCE MUSEUM

A SCIENCE MUSEUM CENTER REACHING THE ENTIRE STATE VIA ETV

The main purpose of the Science Museum Center is not to become a self-limited citadel, but rather to accept a vital role in the advancement of science throughout all of Virginia. In a number of ways, the Museum Center would extend its collections and professional planning skill to the entire state. One of the more promising methods is through the use of ETV to give a state wide audience access to the Museum Center's activities.

The potential impact of museum-ETV collaboration on science education in Virginia has exciting possibilities. Central Virginia ETV has responded enthusiastically to the proposed partnership: ". . . we shall be happy to enter into some sort of working arrangement which will, we believe, be of great mutual benefit." The advantages accruing to Virginia from this mutual cooperation have been underscored, for "any programs which are produced . . . [within the museum] . . . will be made available to educational television stations throughout the state." Another possibility is that when local museums are founded, ETV would televise programs from these new institutions as well.

Programs emanating from the Museum Center would expand and enrich the teaching of science in Virginia. Through ETV, the museum would be opened to vast numbers of students. For example, Central Virginia ETV reaches 40 counties with an estimated population of 1,000,000 and serves approximately 300,000 public, private, and parochial school students in more than 550 schools. In addition, several adult programs are offered during the evening on ETV. Museum activities through ETV would be equally valuable for teachers and university students. Refresher courses would offer teachers the benefits of which would then be conveyed directly to classes. Partnership with ETV would signify the Museum Center's intention to employ the most effective means possible to share its advantages with every corner of Virginia.

A SCIENCE MUSEUM SYSTEM FOR VIRGINIA

The Science Museum Center would operate under a dual priority: to effect excellence for itself and to strive for the eventual creation of a statewide science museum system. It can be expected ultimately that a number of local communities would initiate plans for the etsablishment of regional museum centers. The headquarters or Science Museum Center would lend all possible aid during the planning stages. Upon the completion of local museums, the Museum Center would act as a coordinating agency providing temporary exhibits, films, and lectures for new museums. Moreover,

it would promote similar exchanges between regional museum centers. The creation of local museums would be contingent on local interest and support. The Center staff would be charged with furnishing professional planning assistance where sufficient backing is prevalent.

The central purpose in the establishment of a statewide system is to involve a maximum number of Virginians in the pursuit of scientific knowledge. A basic objective is to capitalize on Virginia's geographical advantages. Regional museums would be located in areas conducive to a particular scientific discipline. An aquarium, for instance, might be erected in a bayside community or an arboretum founded in a forest region. Thus, the system would put Virginia's rich natural environment to its fullest use.

Local museums would not be restricted to any one area of science. In fact, the Museum Center would encourage branch institutions to organize programs relevant to the needs of their communities. A regional museum's activities would be varied in order to benefit a cross-section of the area's population. These are some of the services foreseen for a local museum:

- The institution of local teacher education programs
- The organization of general classes for children and adults dealing with current-interest science
- The initiation of teacher-student field trips
- The display of circulating exhibits—mobile or in-museum—provided by the Museum Center
- The composition of exhibits and programs to be exchanged with those of other localities

The creation of a local museum would represent a fusion of the Museum Center's exchange services with the science-study advantages of a given area.

ACTIVITIES AT THE SCIENCE MUSEUM CENTER

While assisting in the creation of local museums, the Science Museum Center would be conducting a full, many-faceted program of its own. Committed to the progress of Virginia science, it would initiate a variety of activities. The range of in-center services would have important implications for all Virginia. Some of the major projects would be:

- To present in-center lectures, exhibits, tours, films and demonstrations as well as coordinating the same for regional museums
- To serve as a collection agency for Virginia's natural resources for study and exhibit purposes
- To promote new research programs utilizing area resources and scientists
- To encourage the publication of scholarly papers
- To cooperate with colleges and universities to establish special programs
- To sponsor a museum staff-graduate program
- To conduct museum training programs in order to stimulate museum careers
- To institute science library facilities
- To act as a meeting place for state scientific groups

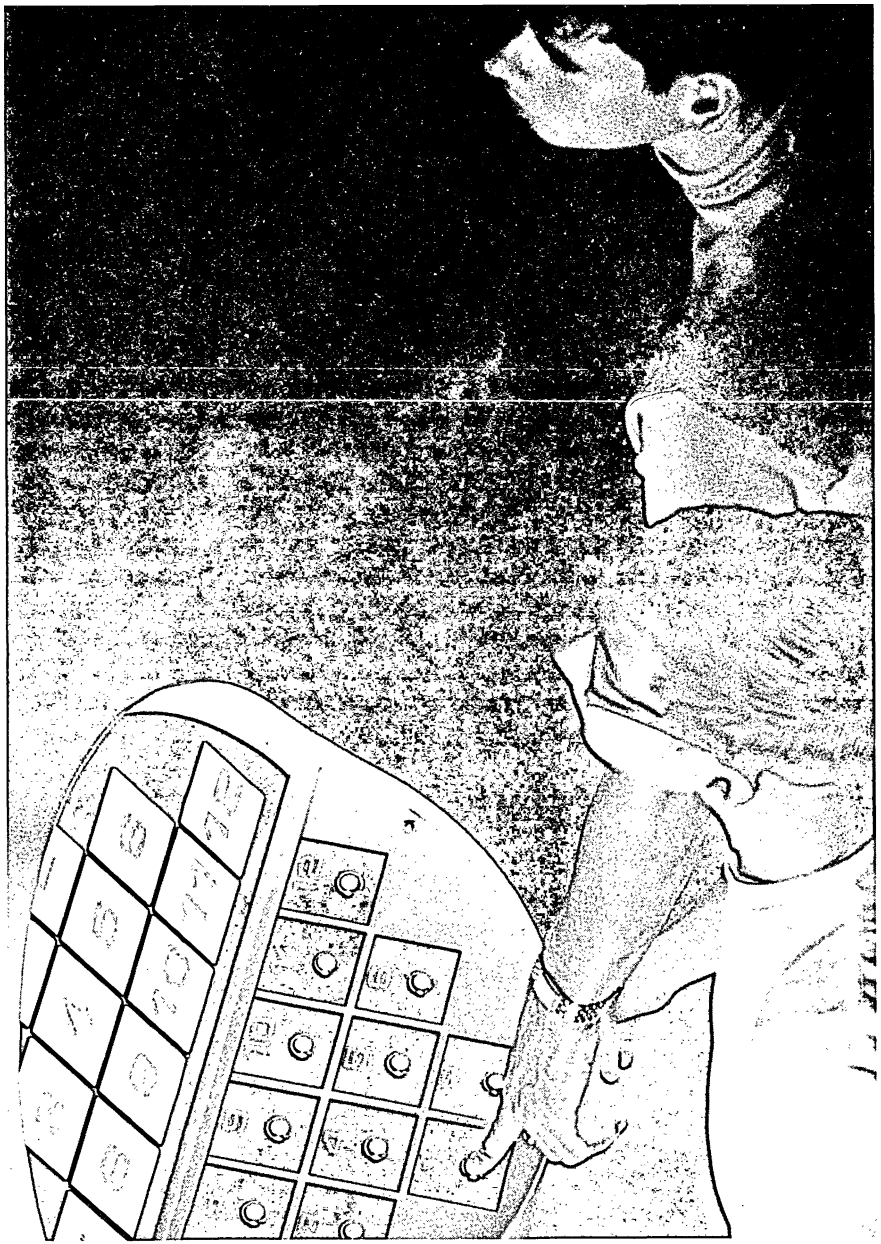


PHOTO: NELSON M. BRYANT

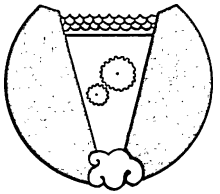
IV. A QUALITY SCIENCE MUSEUM CENTER

Certain criteria have been adopted by museum administrators to measure the quality of a museum. These nine "quality indicators" are listed in HEW'S 1969 Museum survey:

1. Availability of catalogued collections
2. Use of professionally designed exhibits
3. Presence of library facilities
4. Employment of a professional staff
5. Sponsoring of educational-cultural activities
6. Encouragement of substantive publications
7. Distribution of an annual report
8. Initiation of a formal research program
9. Management of a formal professional worker training program

While the majority of the nation's science museums fulfill from one to four of these criteria, it is anticipated that the proposed Science Museum Center would eventually satisfy all nine. Moreover, the Center might well serve, in this respect, as a model for local museums that might later become a part of the state system. It is interesting to note that only 2% of America's 438 science museums meet all the quality requirements. This statistic accentuates the high level of quality recommended for the Science Museum Center and its statewide system. Thus, in terms of excellence, the Museum Center would compare favorably with any other similar institution in the nation. Its quality cannot be attributed to proposed size or to the scope of the Museum Center's divisions; in fact, these objectives have been intentionally limited. It is long range, comprehensive planning that will ensure that the Science Museum Center of Virginia is one of quality.

PHOTO: CHARLES LARUS



V. SOME EXAMPLES OF SUPPORT FOR A SCIENCE MUSEUM OF VIRGINIA

The concept of a science museum for Virginia has stirred enthusiasm in nearly every corner of the state. Public hearings held earlier this year in Norfolk, Richmond, Fairfax County, and Roanoke produced overwhelming support. The virtual unanimity of approval ranged from private citizens to the Virginia Academy of Science and the Virginia Council of College Presidents. Since then, the State Museum of Science Study Commission has received numerous letters from individuals and a great variety of organizations. Excerpts from the letters and hearings follow; along with a partial list of organizations endorsing the museum concept:

- *NASA Langley Research Center:*

"A State Museum of Science, including a Space Division, would serve the Commonwealth of Virginia well. Not only must our youth be knowledgeable with, and inspired by, this country's great ac-

complishments in science and space exploration, but communication between the scientist and the public is a prime current necessity.

Interesting our youth will insure future accomplishments in science, and adequately informing the public, will permit a realistic assessment of scientific and space efforts."

- *The River Basins Committee of the Conservation Council of Virginia:*

"Why does Virginia need a Museum of Science? These seem to me to be the principal reasons:

1. To encourage a positive attitude toward science in a public increasingly hostile to the complex forces bringing about abrupt changes in daily life.

2. To spark ambition for the prolonged education for scientific careers required in a technologically advanced society.

3. To foster appreciation of the dependence of human society on the natural world, encouraging future generations to restore rather than destroy the natural environment.

4. To complement our state educational system, now striving for parity with the finest in the nation."

- *From the following organizations in the Roanoke area:*

Roanoke Valley Mineral and Gem Society, Inc.
Roanoke Valley Pharmaceutical Association
Roanoke County Schools
South View H.D. Club
Vinton H.D. Club
Roanoke Valley Regional Planning Commission Executive Committee
Roanoke Valley Chamber of Commerce
City of Salem Republican Committee
Conehurst H.D. Club
Oak Grove H.D. Club
Summit Hills H.D. Club
Cave Spring H.D. Club
Lindenwood H.D. Club
Oakland Club
Mt. Pleasant H.D. Club
Salem-Roanoke County Chamber of Commerce
Vinton Chamber of Commerce, Inc.
Downtown Roanoke, Inc.
Roanoke Council of Garden Clubs
Wildwood H.D. Club
Sequoia Club
The Quota Club
Wednesday History Club
Roanoke Valley PBX Club
Blue Ridge District—Virginia Federation of Women's Clubs
Roanoke Historical Society
Roanoke Dental Society
Roanoke County Chapter—Izaak Walton League of America
Roanoke Civitan Club
Roanoke Valley Development Corporation
Roanoke Rotary Club
Cave Spring Jaycees

"There is a thirst among our nearly 200,000 citizens in the Valley for cultural and educational development. Roanoke becomes more and more the second Capital of Virginia offering substance for the fourth of the State's population which lives west of the Blue Ridge and too many miles from the historical and patronized advantages of the Capitol.

Our group stands ready to be of any service possible to aid in your endeavors."

- *The Russell County Woman's Club:*

"The Russell County Woman's Club should endorse the proposed Virginia Museum of Science wholeheartedly."

- *Greater Richmond Council of Teachers of Mathematics:*

"Specifically . . . [our] group would like to encourage and recommend that mathematics be given explicit attention by the Commission."

- *Virginia Association of Preparatory Schools:*

"BE IT RESOLVED that the Virginia Association of Preparatory Schools urge the Commonwealth of Virginia to move forward the establishment of a modern State Museum of Science as a means of encouraging, stimulating and supporting the understanding and study of scientific and technological developments by students at elementary, high school, college, and university levels and by the general public."

- *Richmond Mathematics and Science Center:*

"In order to attain excellence in science education throughout the state, some agency must spearhead a complete mobilization, organization, coordination, and utilization of all human and physical resources of the scientific community.

A strong science museum could serve a supporting and catalytic role in bringing together and utilizing these resources throughout the state. The thrust of this effort would be to increase significantly the scientific literacy of the total population, which is extremely vital to the strength of our state and nation in a world that is becoming more and more science-technology oriented."

- *The Faculty of the 1969 Summer Program of the Richmond Mathematics and Science Center:*

"[We] . . . wish to express [our] support for the concept of a Science Museum of Virginia. The museum would benefit all the citizens of Virginia, regardless of their age, sex, race or religion.

We . . . believe that only through a progressive and all-inclusive educational system can we fulfill our commitment to developing the full potential of all of the citizens of Virginia."

- *Virginia Academy of Science Ad Hoc Committee on a Museum of Science in Virginia:*

"1. A central Museum of Science be established in the Richmond area.
2. Education should be the major goal of the museum and public participation should be emphasized.
3. That primary consideration be given to establishing a planetarium and a botanical garden as starting units.
4. The following Richmond area sites should be given consideration—

Maymont-Byrd Park area
State-owned Elko tract
Broad Street Station area.

5. The major industries in Virginia be contacted to ascertain if current exhibits, such as the Virginia Electric and Power Company's exhibit at Surry, Virginia, would be available to the Museum.
6. The Virginia Academy of Science enthusiastically endorses the concept of a Museum of Science for Virginia and offers its support and assistance to the Study Commission in implementing this concept."

- *Virginia Academy of Science Museum Symposium:*

"As a result of the talks by the panelists and the discussion which followed, the group seemed to be in general agreement on the following points:

1. There is a need for the establishment of a Museum or Center of Science in Virginia.
2. The primary purpose of such a museum would be to serve the needs of education.
3. The main complex should be in a building housing several phases of science and should be located in or near an important metropolitan center.
4. Subsidiary units should be placed in strategic locations throughout the state.
5. Research centers should be located near or adjacent to colleges and universities.
6. Building and operating funds should be obtained from industry, private donations, foundations, organizations, admission fees, and state aid.
7. Involvement of industrial people in the community should be solicited.

This involvement, as well as public support, is essential."

- *Council of College Presidents:*

"Whereas, the Council of College Presidents recognizes the value of such a museum in the education of Virginians at all levels: secondary, college, graduate and adult education, therefore:

Be it resolved, that the Council express to the Study Commission its support for such a museum and for the establishment of a coordinated statewide program of related activities."

- *Virginia State Chamber of Commerce*

"Truly industry and science are partners. A science museum for Virginia would be of immeasurable value to our entire Commonwealth and to all citizens."

PHOTO:
NATIONAL
GEOGRAPHIC
SOCIETY
JACQUES-YVES COUSTEAU

VI. THE PROPOSED BASIC PLAN FOR THE SCIENCE MUSEUM OF VIRGINIA

Many American museums are suffering today from a lack of foresight in their original planning. Without sufficient space and an initial comprehensive plan for expansion, these institutions face the vicissitudes and ineffectiveness associated with overcrowding or the costly prospect of moving to new sites. In order to serve the increasing annual influx of visitors, some museums have been compelled to limit their overall programs. Consequently, there has been a reshuffling of priorities, and community and state educational services often have been severely handicapped.

Being cognizant of the limited planning that has marked the establishment of many of the nation's museums, in most instances because of the necessity for employing opportunism and improvisation, the Study Commission wishes to lay stress on the importance of careful, long range, conceptual planning. Of the many factors that must be considered during the initial planning stage, two are of utmost importance (1) ample space for future growth and (2) provision for maximum flexibility.

A Museum Center of the scope envisioned by the Study Commission necessarily involves building by phases. There are innumerable ways a Science Museum Center which is expected to encompass the major areas of science can be organized. This report proposes six divisions as follows: 1. Physical Sciences 2. Botanical Gardens 3. Natural History 4. Industry and Technology 5. Oceanography and Limnology 6. Zoological Gardens. The first phase, Physical Sciences Division, should receive the highest priority and should be completed as soon as possible, but the order of the priority of other divisions, should be flexible, except that a substantial start should be made on the Botanical Gardens Division as soon as practical. If a special need or demand arises for a certain division, it would be erected out of sequence without altering the master-plan. Buildings housing the various divisions should be in harmony with the natural terrain and setting of the site, as well as in consonance with contiguous buildings and institutions in the same general area. Each division is briefly described below.

PHYSICAL SCIENCES DIVISION

The spectacular success of the space program of the United States has been due in no small measure to the extraordinary skill of our highly disciplined astronauts and the brilliantly organized and administered components of NASA; but it is also due to the astounding technological advances in the recent decades, ad-

vances that doubtless will continue in the years ahead. While engineering and technology are to a high degree self-sustaining and self-invigorating, major steps forward in these fields ultimately depend upon an input from pure sciences—especially physics, chemistry, mathematics and astronomy. It is this division of the Museum Center, called the Physical Sciences Division for the sake of brevity, that would illustrate and depict the history, concepts and basic principles of these sciences. This division, in cooperation with the Division of Industry and Technology, would have the interesting and challenging task of showing the interdependence of science and technology. For example, among the almost infinite number of technological breakthroughs that may be suitable for this purpose are: inertial guidance, a method for determining course based on magnitude and direction of acceleration; cryogenics, a branch of physics dealing with very low temperatures; laser, a means of amplifying radiations within or near the range or light; radiotelescope; modern techniques of computerization; the transistor, and other mechanisms depending on solid state physics. Each of the above techniques or devices have found application in space exploration as well as in the developing techniques of earthbound sciences.

The Physical Sciences Division is recommended for the highest priority in the proposed Science Museum Center. In addition to provision for exhibits, major components that should be considered for inclusion in this division are: an auditorium for showing films and for scientific meetings, a modern planetarium seating 500 persons, a small or medium sized telescope, an atmospherium for illustrating the science of meteorology, office and storage space, and a restaurant or cafeteria.

BOTANICAL SCIENCES DIVISION

Population pressure and rapid urbanization are facts of present day Virginia that demand counter-steps to restore to our residents the natural advantages the rural or semi-rural environment gave to most Virginians of a generation or so ago. Recognized ways of restoring or preserving the natural flora of an area are the establishment of parks, recreational areas, and forest preserves. Virginia is fortunate in having a number of active state and local agencies, and private groups that are in pursuit of these goals. A botanical garden or arboretum is also a means of preserving natural flora of an area, and appropriate planning often enhances its beauty and accessibility. The botanical science division as envisioned for the Museum Center would have a wider purpose than a typical botanical garden and arboretum since it would also actively promote a better understanding of the agricultural sciences in cooperation with The Division of Industry and Technology.

Some anticipated functions of this division are:

Provide a spacious and beautiful setting for all activities of the Museum Center

Educate visitors in the kinds and uses of Virginia flora

Demonstrate the need for research in the production of new horticultural varieties and for their introduction into the state

Maintain the principal state herbarium for use by scholars and

amateurs

Initiate and coordinate field trips to collect new plant species not represented in the Museum Center herbarium

Undertake research appropriate for botanical gardens and arboretums, and as necessary to supplement research carried on by institutions of higher learning and other agencies

Demonstrate by living exhibits Virginia crops of commercial importance and the methodology of producing them

Demonstrate the critical role of chlorophyll bearing plants in the oxygen and carbon dioxide cycles and the relation of green plants to air pollution

Conduct or encourage classes in horticulture and gardening

Demonstrate by appropriate means the opportunities that exist in agricultural pursuits

NATURAL HISTORY DIVISION

The expression "natural history" goes back at least to Pliny the Elder, who in the first century A.D. used it as the title of a 37-book work devoted to a mathematico-physical description of the world (astronomy), and to a summary of the current knowledge of geography, anthropology, zoology, botany and mineralogy. Today the expression still retains the meaning of a wide compartment of knowledge concerning the natural resources. However, the word "history" as thus used now includes far more time perspective than the ancients knew, owing to advances in geology and paleontology, sciences usually also included in the same wide compartment. Many museums that limit their interests to this area have recognized the convenience of the expression by including it in their title, as for instance, the American Museum of Natural History, the Chicago Museum of Natural History, and the National Museum of Natural History. Calling a museum a "Science Museum" does not necessarily denote an absence of interest in natural history, but rather more freedom to include modern technology.

"Natural history" encompasses a broad spectrum of activities dealing with the preservation and study of natural objects and specimens, both animate and inanimate. It also involves the study of artifacts, or man-made objects from remote cultures. The province of a natural history museum is typically restricted to these sciences: geology, paleontology, anthropology, mineralogy, zoology, botany and sometimes ecology. A limited type of natural history division is envisioned for the Science Museum Center. It would

be devoted primarily to Virginia's natural resources as well as paleontological, and archeological artifacts and specimens. Such a division would have many advantages for this commonwealth's citizens. Some of them are:

- Scholarly research conducted by graduate students and teaching staffs on collections indigenous to Virginia, unique, or not readily available elsewhere
- Collections used in teaching at all educational levels and presented in exhibits or studied in formal classes at the museum center; and conveyed to regions of Virginia by mobile units and ETV or displayed at local natural history museums
- Access for scholars and public alike to Virginia artifacts and specimens which have heretofore gone unexhibited due to the lack of a display center
- Service to industry in the cataloguing and identification of natural resources, especially in such areas as geology
- Initiation and coordination of statewide field trips in order to add to the state's existing collections of minerals, artifacts, and the like
- Publication of reports dealing with natural history resources for distribution to schools and interested individuals
- Composition of exhibits, lectures and resource materials for education in the conservation of natural resources

INDUSTRY AND TECHNOLOGY DIVISION

The fundamental aim of this division would be to communicate to visitors the history, evolution, and development of Virginia industry. The dependence of industrial technology on various branches of science would also be demonstrated. The division would serve as a continuing, but constantly changing showplace displaying the accomplishments of Virginia industry. A primary goal of divisional programs would be to stimulate the interest of the young in industry and technology. Moreover, the Museum Center would strive to instill in the average citizen a deeper appreciation of the intricate skills required to handle today's technical jobs. Aside from educational value, exhibits would present a panorama of industrial opportunities.

It can be anticipated that alert industrialists would seize the opportunity to contribute their ideas and support to the Industry and Technology Division. Such cooperation would not only advance Virginia science, but also sustain and improve the state economy.

The great Virginia industries can be expected to seek representation in the Museum Center. For instance, the techniques and processes of the following industries would have immense interest for state citizens: pulp and paper, coal mining, shipbuilding, aluminum, agricultural and medical technology, pharmaceutical, sea food, tobacco, and textile.

There are a variety of ways in which industrial methodology and processes can be dynamically exhibited. Some of them are: through miniaturization, models, actual industrial components, films of processes, and precise illustrations. All of these methods could be effectively communicated to all Virginia by ETV. In many cases, demonstrations could be loaned to local museums and schools or conveyed to localities by mobile units.

OCEANOGRAPHY AND LIMNOLOGY DIVISION

The Oceanography and Limnology Division would be concerned with Virginia's total aquatic life and its environment. Limnology is an area of science dealing with the characteristics of inland waters and their integrity as a natural resource. Oceanography embraces all knowledge pertaining to the physical, chemical, geological and biological nature of the seas. The Division's task would be to make Virginians of all ages aware of the bounty of the sea and fresh waters, and how this bounty brings pleasure, strengthens the economy, and, importantly, how this bounty must be conserved.

Perhaps Virginia's greatest natural resource is water. With 4,000 miles of coast, the Old Dominion has the longest shoreline of any state in the continental United States. Along its boundaries runs the Chesapeake Bay, the finest example of an estuarine system in the world. Into the Bay empty the Commonwealth's great rivers—the James, Potomac, York, and Rappahannock. These river basins serve as the watershed for 20,000 square miles, or half the total area of Virginia. Moreover, impounded water reservoirs and natural lakes compose 150,000 acres, or approximately 240 square miles.

Virginia's vast resources are also highly vulnerable. The aquatic environment is threatened by the flux of nature as well as the abuses of man. On the one hand, there is erosion of natural shorelines, beaches, and tidal marshes. On the other, there are the menacing effects of water pollution: deterioration of water quality, depletion of fishery resources, and degradation of fresh water storage capacity. Virginia's waters also may be affected by the impending spectre of human over-population.

The limnology and oceanography division would be committed to educating the public in the urgency of preventing further destruction of the aquatic environment. It would encourage the constructive use of water. Its programs would stress the fact that the fate of Virginia's waters is of vital concern for all Virginians.

It is only in recent times that the sciences of limnology and oceanography are beginning to receive the attention they merit. Since Virginia is an outstanding maritime state with a promising future in this field, it is essential that Virginians not only understand the need for conserving and protecting their aquatic resources, but how, at the same time, they may yield increasing

recreational and economic benefits. A division of limnology and oceanography in the Science Museum Center would play a leading educational role in bringing about these benefits by the museum techniques of interpretive exhibits, lectures, films, and the like. The activities and programs of this division would purposely relate the aquatic sciences to other divisions of sciences in the Museum Center, supplement educational programs in this field given at Virginia universities, attempt to interpret research in this field for the average citizen and stress the need for continuing research, motivate the young to seek careers in this field, and by appropriate means show the history and technology of Virginia's maritime industries.

ZOOLOGICAL GARDENS DIVISION

A museum attempting a complete survey of the sciences would be remiss in not including facilities for the observation and enjoyment of wild animal life. Aside from the pleasure and excitement created by animal exhibits, a division devoted to the presentation of animals in a natural setting would yield a rich cultural premium. For instance, young people of all ages never cease to be fascinated by animals and this fascination often leads to the acquisition of meaningful knowledge and an appreciation of natural history.

Moreover, a zoological garden assumes increasing importance as the life of Virginians becomes more urbanized. The significance, for both the present and future, of the preservation and display of wild animals has been strongly underscored by William G. Conway, general director of the New York Zoological Society. Seeing zoos as the urban refuges of wild animal life, he states:

> The expansion of urban populations now makes it necessary for zoos to educate the generations growing up without any natural contact with wild creatures. Except at the zoo, opportunities to know or even to become interested in wild creatures are largely vicarious for most city dwellers. Yet, the opinions of these urbanites may ultimately shape the future policies of conservation in this country. (**Science,** January 1969.)

Instead of a zoo, a zoological garden is envisioned for the Science Museum Center. The distinction between the two is important. The term zoological gardens connotes animals in their natural environment, i.e., the terrain and vegetation matching the animal's native habitat as closely as possible. The use of moats and other modern means of exhibition, rather than cages, to contain, but also to afford maximum freedom for specimens is the method of choice. Such a method ensures the health and vitality of the animals. The emphasis of the Zoological Gardens Division would be on Virginia animals since it would be relatively easy to provide them with a suitable environment.

Since a Botanical Science Division has been planned for the Science Museum Center, an ideal scheme would be to establish the botanical gardens, arboretum, and zoological gardens in the same general area. Viewing both animals and plants simultaneously in a natural setting by means of nature trails would have esthetic as well as educational value.

PHOTO:
NATIONAL
GEOGRAPHIC
SOCIETY

VII. SELECTION OF SITE AND LOCATION OF THE SCIENCE MUSEUM CENTER

SITE SELECTION

The selection of a site suitable for the Science Museum Center is crucial to the development of the master plan. Ideally, it would be an area with inherent visual interest, a place which would be a pleasure to visit. A primary criterion is ample space. In order to bring the six divisions into being, a site containing 300 acres or more is essential. Such a spacious area would allow maximum flexibility in the arrangement of the Museum Center's divisions. It also would be conducive to the expansion envisioned in the master plan. In turn, the site would be totally developed. Major points of interest would be carefully planned to exploit the natural topography. The sub-soil characteristics must be capable of supporting the planned structures. The soil must be of a type in which the trees and plants of the arboretum and botanical garden will flourish. A natural body of water would be highly desirable to lend beauty and variety to the site, and essential for the creation of the Division of Oceanography and Limnology.

Other important determinants in the choice of a site are: adequate sewerage disposal, availability of water, electric power, natural gas, police and fire protection and other utilities. It would be an asset for the site to be in close proximity to other scientific and cultural institutions.

SELECTION OF LOCATION

In choosing the Museum Center, there are a number of basic factors to take into account. Foremost among these is accessibility. A location should be selected that is centrally located, in a populous area of the state, and within a reasonable distance of the majority of Virginians. Adequate highways and other transportation facilities are obviously essential. Tourist attendance is another factor of importance. The location selected should have ample hotel and restaurant facilities, recreational and cultural attractions.

PHOTO:
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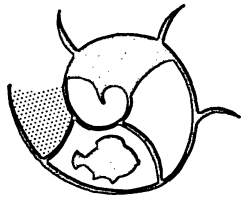
GEOGRAPHIC
SOCIETY



VIII. SOURCES OF REVENUE

In a recent survey of 29 museums conducted by The Boston Museum of Science, it was shown that 60% of the average institution's income came from private funds, while 40% stemmed from public appropriations. Both private and public funds have a variety of sources.

Individual gifts often appear in these forms: unsolicited donations; proceeds from fund-raising drives to support expansion projects; and funds solicited from individuals and corporations in order to meet operating expenses.

In addition, individual gifts are often received in the form of property, trusts, and endowments. Because of its continuing nature,

interest from such gifts is a key source of income. Nearly one-third of the resources of the Bernice B. Bishop Museum in Honolulu originates from a general trust.

Moreover, foundations may act as a major source of museum revenue. This is particularly true for museums in the planning stage. A foundation's generosity can greatly enhance the establishment of a museum. Then, too, foundation grants often finance special museum projects.

In some cases, municipal government assumes a large share of a science museum's operating costs. The city of San Francisco, for instance, provides roughly one-third of the California Academy of Science's funds. New York City appropriations cover most of the Brooklyn Botanic Garden's operating expenses. Since museums make an important contribution to the economic and cultural life of a city, local governments accept responsibility for a considerable portion of the museum's expenses.

While state governments rarely contribute to the operating costs of a strictly municipal science museum, they do provide support in varying degrees for museums in a state museum system. Generally the state can be expected to assume the major share of a state museum's operating cost. The state museum would be, in fact, a state agency and would thus deserve adequate support. Additionally, the federal government may be requested to provide funds to match a state's initial appropriation for planning and capital outlay under appropriate circumstances.

Although the federal government does not subsidize a state or local museum's operating expenses, it does finance research projects. Such grants composed 11% of the total income of the Brooklyn Botanic Gardens in 1967-68. Moreover, federal agencies might also sponsor training programs at the museum in cooperation with state schools.

Another important source of museum revenue is membership fees. Sums from a wide membership can be sizable. Such fees account for 15% of the annual income of The Museum of Modern Art in New York.

The practice of charging admission is coming into wider use each year as a new and significant means of boosting museum income. Considering museums of all types, it costs about $1 to serve each visitor. Admission charges presently provide considerable support for some museums. The operating expenses of The Morehead Planetarium, for example, are essentially covered by admission fees.

Most museums receive aid from two other sources: a charge for special exhibits or programs, and through profits from a museum shop. The typical museum earns from $10,000 to $20,000 a year from shop sales.

A sampling of annual reports reveals a variety of financial sources for museums. In 1963-64, The Bishop Museum in Honolulu received one-half of its income from local and state agencies, one-third from trusts, and one-sixth from its own enterprises. In 1967-68, The California Academy of Science derived one-third its total revenue from municipal funds, one-fourth from museum shop sales, and the remainder from contributions and endowments.

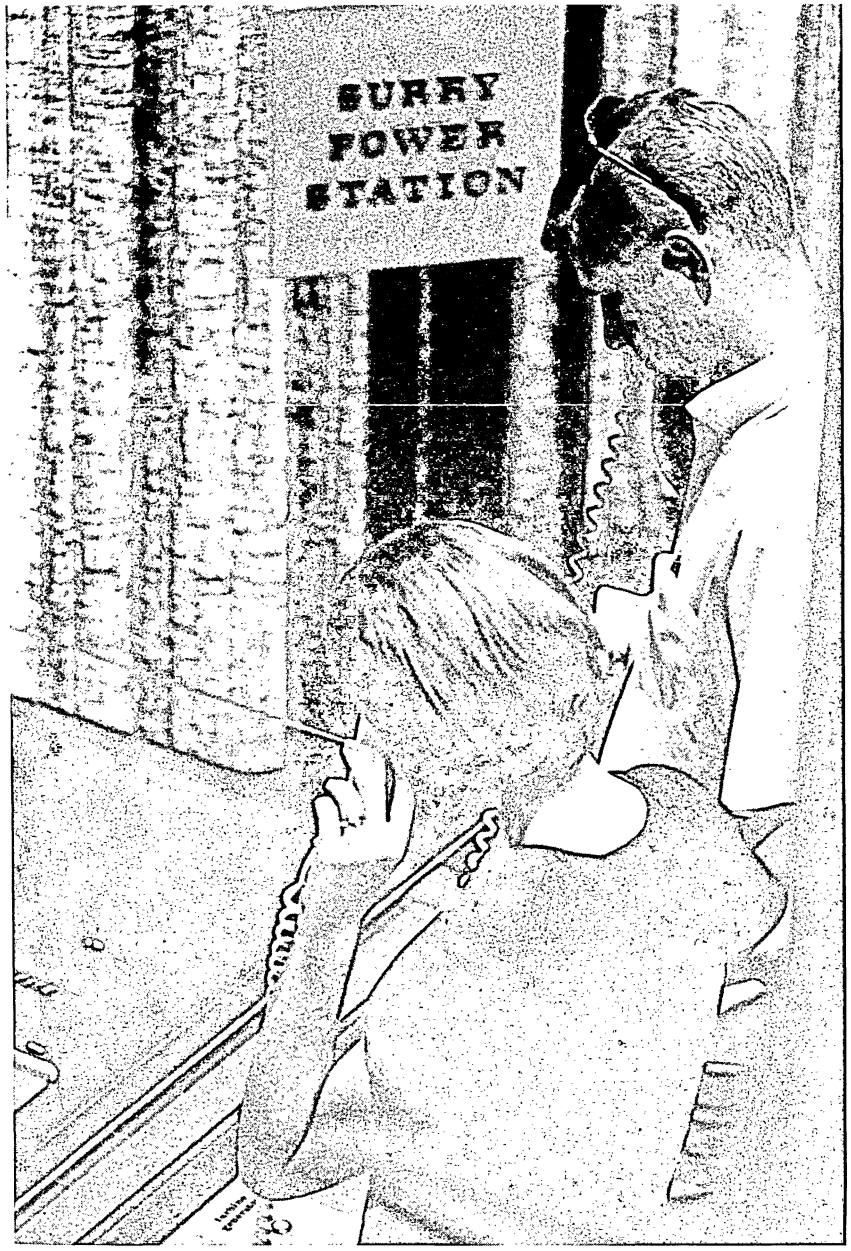


PHOTO: NELSON M. BRYANT

IX. APPENDIXES

LEGISLATION ESTABLISHING THE STATE MUSEUM OF SCIENCE STUDY COMMISSION

The State Museum of Science Study Commission was created, and directed to make the study which is the subject of this Report, by Chapter 250 of the 1968 Acts of The General Assembly of Virginia. The text of that Act is as follows:

CHAPTER 250

A bill to amend and reenact § 9-61 of the Code of Virginia, relating to creation or revitalization of the State Museum of Science Study Commission; members and officers; how appointed; expenses; study to be conducted; and to repeal §§ 9-64 and 9-65 of the Code of Virginia, relating to authority of Commission to acquire suitable property; and to the Director of the Museum of Science.

Be it enaced by the General Assembly of Virginia:

1. That § 9-61 of the Code of Virginia be amended and reenacted as follows:

§ 9-61. Creation; members and officers; expenses.—There is hereby created the State Museum of Science Study Commission, to be composed of five members, three to be appointed for four year terms by the Governor from the State at large; and one member from the Senate of Virginia, to be appointed by the President of the Senate, and one member from the House of Delegates to be appointed by the Speaker thereof for terms coinciding with their terms as members of their respective houses. Vacancies shall be filled by the appointing authorities for the unexpired

terms, and members of the Commission shall serve until their successors are appointed and have qualified. It shall elect one of its members as chairman and another as secretary. Members shall serve without compensation but shall be paid their actual expenses in the performance of their duties. The Commission is hereby directed to conduct a study to determine the feasibility of establishing or revitalizing a Virginia Museum of Science and to determine what the scope and financial requirements should be of such a museum including the appropriateness of including a History Division. The Commission shall conclude its study and make a report of its findings and recommendations to the Governor and General Assembly not later than October one, nineteen hundred sixty-nine.
2. §§ 9-64 and 9-65 of the Code of Virginia are hereby repealed.

Pursuant to this Act, the Speaker of the House of Delegates, The Honorable John Warren Cooke, appointed Glenn Yates, Jr., a member of the House Representing the City of Portsmouth; The President of the Senate, Honorable Fred G. Pollard, The Lieutenant Governor of Virginia, appointed William F. Parkerson, Jr., the member of the Senate representing the county of Henrico; and The Honorable Mills E. Godwin, Jr., Governor of Virginia appointed the following individuals from the State at large: Dr. Roscoe D. Hughes, Professor of Genetics, Medical College of Virginia, Dr. T. Dale Stewart, of McLean, Senior Anthropologist of the United States National Museum, Washington, D. C., and Mrs. William A. Stuart, Jr., of Rosedale.

The Commission met, organized and elected Senator Parkerson as Chairman, Dr. Hughes as Vice-Chairman and Mrs. Stuart as Secretary. The Division of Statutory Research and Drafting, represented by Wildman S. Kincheloe, Jr., served as Secretariat for the Commission.

The Commission, in addition to meeting in Executive Session on many occasions, held an open meeting in the Capitol which was attended by many interested private citizens and representatives of interested organizations. The statements made by these persons, and the informal discussions between them and the members of the Commission, were of considerable benefit.

The Commission held four public hearings, which were given wide publicity and were well attended. The sites of these hearings were: The Richmond Academy of Medicine Auditorium, Richmond; The Auditorium of the Kirn Memorial Library, Norfolk; The Auditorium of the Lecture Hall Building on the Campus of George Mason College, Fairfax, and The Auditorium of the Roanoke Memorial Rehabilitation Center, Roanoke.

RECOMMENDED ENABLING LEGISLATION

A BILL

To create The Science Museum of Virginia and declare its purposes; to provide for the appointment of the Board of Trustees thereof and to prescribe their powers and duties.

Be it enacted by the General Assembly of Virginia:

1. § 1. There is hereby created, and constituted an agency of the Commonwealth, an institution to be known as "The Science

Museum of Virginia," hereinafter in this Act sometimes referred to as the "Museum." The exercise by the Museum of the powers conferred by this Act shall be deemed and held to be the performance of an essential governmental function.

§ 2. The purposes of The Science Museum of Virginia are: To deepen our understanding of man and his environment; to promote a knowledge of the scientific method and thus encourage objectivity in the everyday affairs of man; to educate citizens of all ages in the concepts and principles of science and how these concepts and principles form the foundation upon which rests our technological society and its economy; to motivate and stimulate young people to seek careers in science; to encourage an understanding of the history of scientific endeavor; to provide special facilities and collections for the study of Virginia's natural resources; and to foster a love of nature and concern for its preservation. These purposes are hereby declared to be a matter of legislative determination.

§ 3. The Museum shall be governed by a Board of Trustees, consisting of seven members, each of whom shall be appointed by the Governor. The appointments shall be subject to confirmation by the General Assembly if in session and, if not, then at its next succeeding session. The Board of Trustees will hereinafter in this Act be referred to as the "Board."

§ 4. Two of the first members of the Board shall be appointed for terms of two years, two for terms of three years, two for terms of four years and one for a term of five years. Thereafter, the members of the Board shall be appointed for terms of five years each beginning from the expiration of the respective terms of their predecessors, except an appointment to fill a vacancy shall be for the unexpired term. Members of the Board may be suspended or removed by the Governor at his pleasure. For the purpose of succession, the initial appointments of members for terms of less than five years shall be deemed appointments to fill vacancies. No person shall be eligible to serve for or during more than two successive terms; provided, however, any person appointed to fill a vacancy may be eligible for two additional successive terms after the term of the vacancy for which he was appointed has expired.

§ 5. The Board shall select a chairman from its membership, and under rules adopted by itself may elect one of its members as vice-chairman. It shall elect one of its members as secretary.

§ 6. The members of the Board shall receive no salaries. They shall be paid their necessary traveling and other expenses incurred in attendance upon meetings, or while otherwise engaged in the discharge of their duties, and the sum of twenty-five dollars a day for each day or portion thereof in which they are engaged in the performance of their duties.

§ 7. Before entering upon the discharge of his duties, each member of the Board shall take the usual oath of office.

§ 8. Each member of the Board shall give bond, with corporate surety, in such penalty as is fixed by the Governor, conditioned upon the faithful discharge of his duties. The premium on the bonds shall be paid from funds available to the Museum.

§ 9. The Board shall meet at such times as it deems ap-

propriate and on call of the chairman when in his opinion meetings are expedient or necessary.

§ 10. Four members of the Board shall constitute a quorum for all purposes.

§ 11. The Board is hereby authorized and empowered:

(a) To select the site of the Museum;

(b) To appoint the Director of the Museum, and prescribe his salary;

(c) To prescribe rules and regulations for the operation of the Museum, including, but not limited to, the kinds and types of exhibits, and the making of plans for expansion from time to time of the Museum;

(d) To employ planning consultants and architects in relation to establishment of the Museum and any expansions thereof;

(e) To acquire by purchase, gift, loan or otherwise land necessary for establishment and expansion of the Museum, and exhibits and displays;

(f) To enter into contracts for construction of physical facilities; and

(g) To adopt a seal.

§ 12. The Director may engage or authorize the engagement of such agents and employees as may be needed in the operation and maintenance of the Museum, subject to the approval of the Board.

§ 13. The Board is authorized, on behalf of the Commonwealth and in furtherance of the purposes of the Museum, to receive and administer gifts, bequests and devises of property of any kind whatsoever, and grants from agencies of the United States government, and to expand, or authorize the expenditure of, funds derived from such sources and funds appropriated by the General Assembly to the Museum.

COMMONWEALTH OF VIRGINIA

STATE MUSEUM OF SCIENCE STUDY COMMISSION

Honorable Mills E. Godwin, Jr.
Governor of Virginia
State Capitol
Richmond, Virginia 23219

Richmond, Virginia
October 15, 1969

Dear Governor Godwin:

I have the honor to transmit the report of the State Museum of Science Study Commission, pursuant to Chapter 250 of the Acts of the 1968 General Assembly.

Sincerely,

William F. Parkerson, Jr.

William F. Parkerson, Jr.
Chairman

WFP/p