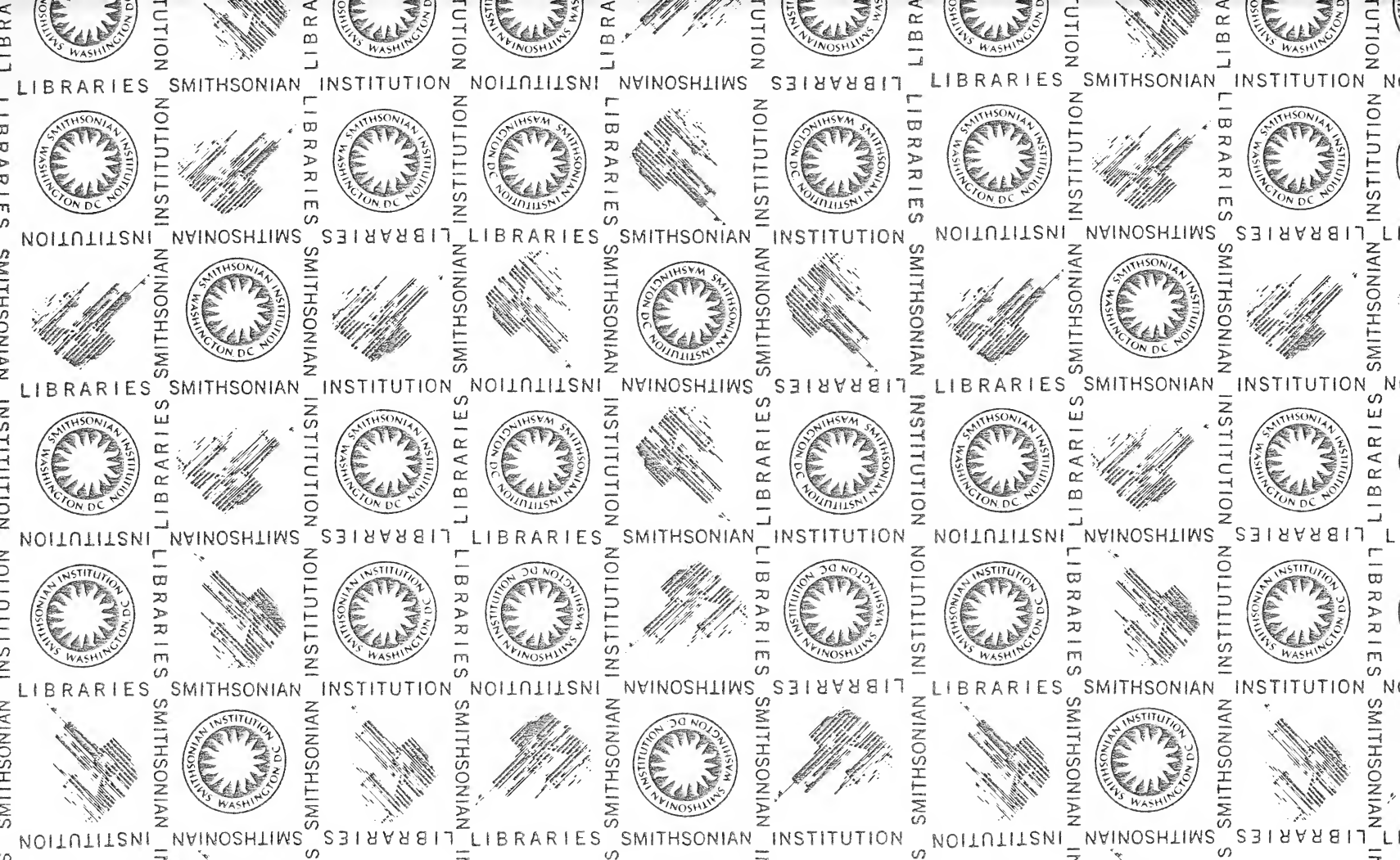
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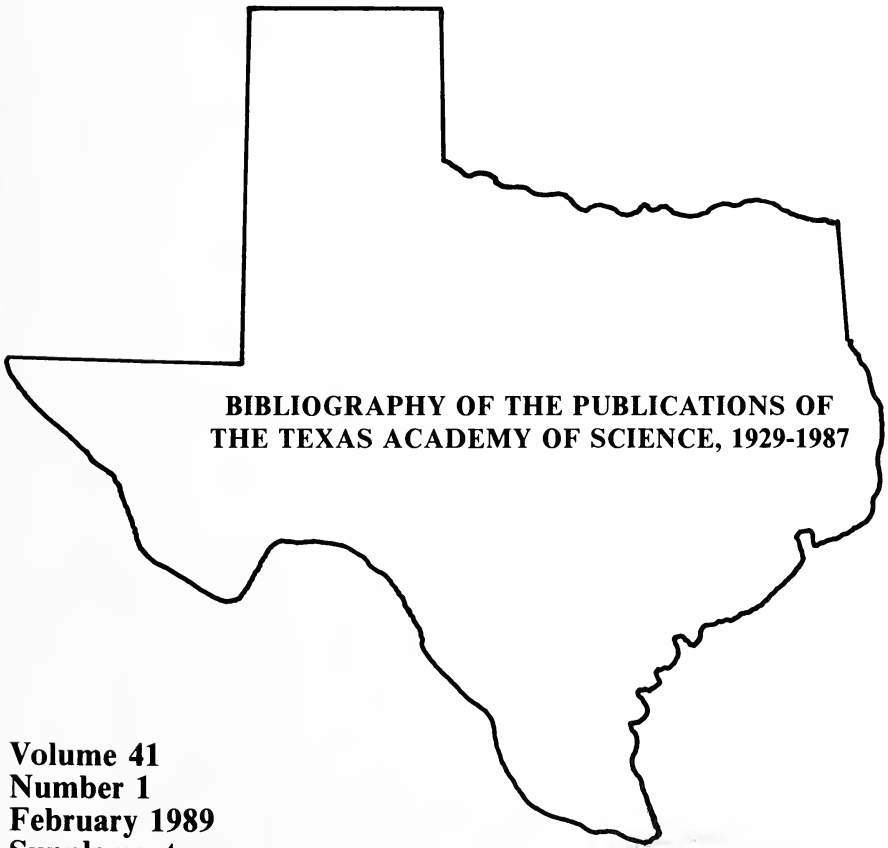

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This bibliography contains all of those publications through 1987. Intermittently, the Academy has published a newsletter, and abstracts of papers presented at the annual meetings along with the program. These are not included in this bibliography.

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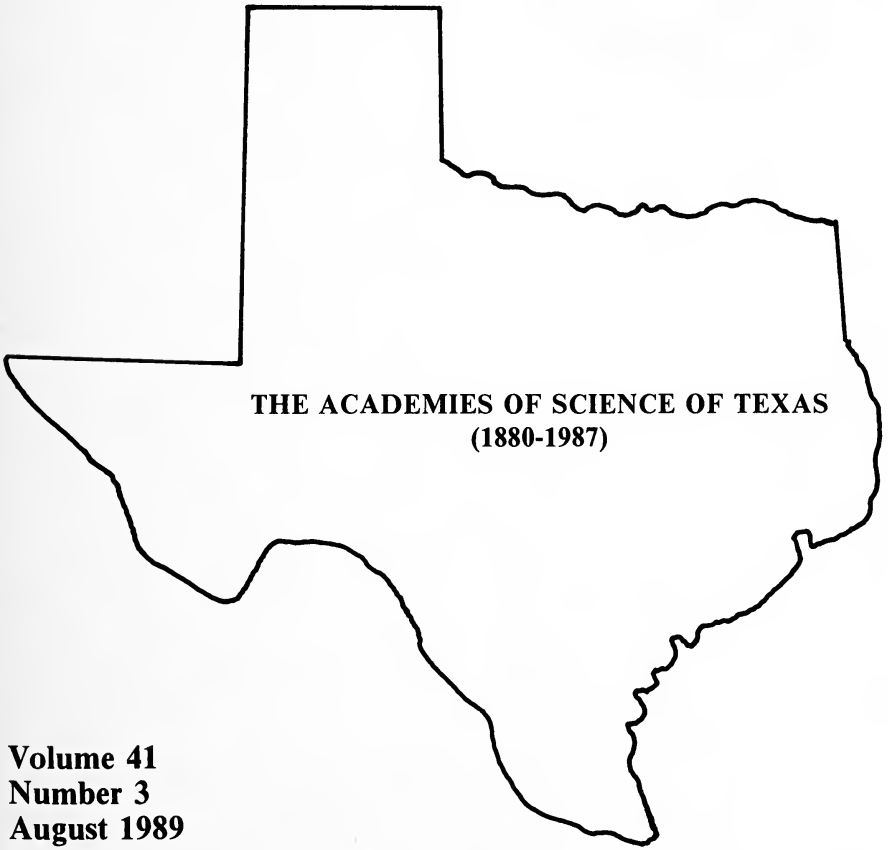

THE ACADEMIES OF SCIENCE OF TEXAS
(1880-1987)

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THE ACADEMIES OF SCIENCE OF TEXAS (1880-1987)

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THE ACADEMIES OF SCIENCE OF TEXAS (1880-1987)

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THE ACADEMY OF SCIENCE OF TEXAS, 1880-1890

In the *Texas Farm and Ranch*, a bimonthly newspaper published in Dallas, Texas, during the end of the nineteenth century, there appeared in the 1 December 1886 issue the following article on page 5.

The Texas Academy of Science— Its History and Growth

The organization of the Academy of Science of Texas dates back to October 27, 1880, with the capital (Austin) as its birthplace. This association was organized by such well known scientists as S. B. Buckley and Cincinnatus B. Smith, of Austin, and Dr. F. L. Yoakum, of Palestine, Texas.

At the first assembling of the Society after its organization, His Excellency, Gov. O. M. Roberts, was elected its president. Meanwhile the Academy had been augmented by the addition of several members, consisting chiefly of State officers.

The tastes and habits of a large proportion of its membership (comprising herein even the great statesmen on its rolls) being incompatible with, and unsuited to, the unlimited amount of labor as well as time, to be expended in the field of natural research, the organization, as a result, effected but little, and the existence of the association was scarcely indicated by any activity on its part, but was rather nominal than otherwise.

Dr. F. L. Yoakum and S. B. Buckley latterly concluded to remove the location of the Academy to Palestine, where could be found a number of men of genius and scientific tastes and achievements. Here, at Palestine, it underwent a reorganization with some thirty members.

The Academy now began a new and vigorous life, and a career of increasing usefulness. Within a limited period the membership had swelled to one hundred and included in its lists some very scholarly ladies. Its members resided in various parts of the State.

The subsequent removal of its secretary, Dr. F. L. Yoakum, to Tyler, Texas, resulted in the removal of the Academy's scientific collection and apparatus to that place.

The doors of the Museum were for the first time, at the late Texas State Fair, thrown open to the public inspection.

The objects proposed by the founders of this Institute, as explained by its president, are as follows:-

The first and primary object is the mutual improvement of its members.

Another great end and object to be obtained, is the collecting together of our own natural history, and that, too, before the virgin

fields of this great empire have been stripped of their rich and varied specimens, and having collected them, to preserve and hand down to our children these wonderful evidences of the rich natural resources of their parent State; thus contributing to the intelligence and instruction of our own people and State.

The third great end proposed is the inculcation of a desire and taste for scientific knowledge among our people, and the fostering and promotion of scientific pursuits. This taste which it will strive to bring about, it is thought, will result in the more universal adoption of practical teaching, or learning applied practically through the medium of objects.

Another purpose had in mind by the originators of the Texas Academy of Science, is the fortifying our people against the false analysis of minerals and mineral waters, and to emphasize the necessity existing for such preparation of the public against such analysis, an instance is referred to in the president in which four incompatible were represented in one specimen of mineral water, and another of the Sour Lake, made fifteen years ago-was represented as containing free muriated acid and soda contact!! And numerous similar examples have come under the observation of the society. And finally, not the least important, and practical, aim of the academy, is the determination of natural specimens at home, thus doing away with the hitherto humiliating enquiry made of other seats of science outside our own state. And here, the president wishes it announced to the public, that through the various branches of the Academy of Sciences, of Texas, can be furnished to enquirers the true technical name, Natural History, and use of every specimen of nature living or dead.

Geiser (1945*a*) cited F. L. Yoakum as author of the above quoted article, though the article was unsigned. However, Dr. Yoakum was a regular contributor to *Texas Farm and Ranch* at that time and the verbosity is the essence of his style. Evidently he is the "president" referred to in the article, as Buckley died in 1883 or 1884 and Smith was a full-time practicing physician living in Austin. I can find nothing in the records to suggest that the Academy published anything during its existence. I have found no records of meetings, though there could have been records in the State Capitol where Buckley probably had his office in the State Museum. Because the capitol burned on 9 November 1881, this is only a guess (Kingston, 1987:162).

These three originators of the first Academy of Science of Texas were physicians, naturalists, educators, and general scientists. They were all three prolific writers and publishers of their work in various journals outside of Texas. There is a letter from Yoakum in Palestine to the editor of the *Texas Courier-Record of Medicine* at Fort Worth on 12 January 1885: "We will publish the first annual of the Academy of Science of Texas, in July, 50 or 75 pages. If we can find any working men of science through your journal,

we want them as members and contributors" (Geiser, 1959:118). Evidently this remained only a dream.

Samuel Botsford Buckley

Born on 9 May 1809, in Yates County, New York, Buckley was a graduate of Wesleyan University, Connecticut, in 1836. He studied medicine at the College of Physicians and Surgeons in New York from 1842 through 1843. He was a teacher for a few years in Alabama and Illinois, where he collected botanical specimens and shells. He spent some time in Ohio, North Carolina, Tennessee, and Florida collecting specimens and measuring elevations in the southern Alleghanies. He came to Texas in 1859. In January of 1860, he was employed by Dr. Benjamin F. Shumard, State Geologist, as an assistant in charge of the botanical department, also making geological observations. In May of 1860, Buckley, Shumard, and Professor W. P. Riddell, assistant geologist, made surveys from Austin to San Antonio to Corpus Christi, thence to Austin, Shumard returning to Austin in September. Dr. Buckley (1866) claimed in his report that "...Dr. Shumard had been a large portion of the time at Austin, leaving Dr. Riddell and myself in the field. At Austin, he was closely watched by Governor Houston, who, being convinced that Dr. Shumard was not a suitable person for a State Geologist, removed him about the first of November 1860...." He appointed Dr. Francis M. Moore State Geologist and Buckley was appointed his assistant. Buckley and Moore both left for the North and war service during the Civil War. At the end of the war Buckley returned to Texas and was appointed by Governor Throckmorton in charge of the Texas Survey in November 1866. He was authorized to complete the report started by Shumard and Moore before the war. This report (Buckley, 1866) so infuriated Dr. Shumard, who had returned to St. Louis whence he came and again taken up the practice of medicine, that he wrote a letter (about Buckley's Report) to one Swante Palm, esq., dated 11 August 1866 stating: "In the same article he claims that he was connected with me in the geological survey. Now he came to me ragged and penniless, and I employed him to collect plants at one dollar per day, giving him precisely the wages I was giving my teamsters and cooks. All the geology he knows I taught him" (Hill, 1887). Hill stated that Roessler, topographer on the Shumard Survey, charged that Buckley took with him all the notes from the Shumard Survey when he left for the North in 1861.

There seems to have been a vendetta against Buckley because of his report, an attempt to discredit his work and publications, even after his death. Though the two Shumards (Benjamin J. and George Goetz) had both died 10 years before the organization of The Academy of Science of Texas, the shadow of their fracas over the political consequences of B. J.'s work on the first Texas Survey and Buckley's participation in getting Governor Houston to replace Shumard with Dr. Francis Moore as State Geologist

seems to have affected the success of the first organization and even the one in 1892 (Wheeler, 1902).

Dr. George Goetz Shumard (1825-1867) was an M.D., geologist, and naturalist. He came to Texas in 1850 and was a part of the R. B. Marcy Expedition (1850-52) and the John Pope Survey (1853-1858). He was made assistant to his brother, Benjamin F. Shumard, on the first Texas State Survey (1858-1860). He published five papers on Texas geology. It was rumored (Hill, 1887:30) that Governor Runnels thought he was appointing George Goetz Shumard, the well known geologist of Texas, and that by a clerical error the name of Benjamin Franklin Shumard was inserted in the original commission. Benjamin F. Shumard was a well known geologist, one of the founders of the St. Louis Academy of Science, but he had never been to Texas. He accepted immediately, came to Texas, and appointed his brother an assistant.

In writing about Buckley, Geiser (1937:319) in his *Naturalists of the Frontier* noted that "...his work was uneven in quality and frequently was of little value." In his (Geiser's, 1959) series on *Men of Science in Texas (1820-1880)* there appears the following apology on page 20: "In the last issue of *Field and Laboratory* (26, 86-139) appeared the first 331 sketches (Abadie to Gilbert) of collectors, explorers, and observers, in a series that will extend through several issues. My fears of omissions were justified: I find that a sketch of Samuel Botsford Buckley (1809-1884), a graduate of Wesleyan University in Connecticut, and twice State Geologist of Texas (1866-67 and 1874-75) was unaccountably omitted. This omission is more notable since for twenty years I have been holding in obeyance the publiction of a sketch of Buckley (on whom I have very extensive materials) waiting for a portrait of this naturalist to come into my possession. The series continues...." The series continued, but with no biography of Buckley.

The three scientists mentioned above who wrote about Buckley after his death (Hill, 1887:27-42; Geiser, 1937, 1959; Wheeler, 1901) did not know him. In studying the published works of Hill, Alexander's (1976) book on Hill, and the various comments of B. F. Shumard in Hill (1887) and other publications, I find that both scientists were themselves considered controversial by their colleagues.

In March 1874, Governor Richard Coke appointed Buckley State Geologist again. We have an account of the field work in Buckley's (1876) second report. This work was discontinued in 1877, though Buckley seems to have kept his office in the Capitol building for some time. It is not clear whether the museum he had built was transferred to Palestine when he and Yoakum moved the Academy to Palestine, or even that Buckley himself ever went to Palestine (Underwood, 1965).

Buckley was 71 when the Academy was founded in 1880. References disagree as to the year of his death. It was recorded in 1883 in Who Was Who

in America, as it was in Geiser (1959), Johnson and Malone (1960), Nickles (1923), Webb (1952), and the Report of National Museum (1904).

After his retirement from the State Survey, Buckley contributed articles to *The Library of Universal Knowledge.* His field work in the South was commemorated in the name of the black-backed rock squirrel of Texas (*Spermophilus variegatus buckleyi*). He was a widely published natural scientist, a teacher, a scholar, a member of Sigma Xi, and a physician. A list of his publications follows.

1843. Discovery of a nearly complete skeleton of the *Zygodon* of Owen (Basilosaurus of Harlan) in Alabama. Amer. J. Sci., 44:409-412.
1846. On the Zeuglodon remains of Alabama. Amer. J. Sci., (2) 2:125-131.
1859. Mountains of North Carolina and Tennessee. Amer. J. Sci., (2) 27:286-294.
1866. A preliminary report of the Geological and Agricultural Survey of Texas. Houston, 81 pp. and appendix of 11 pp.
1866. Descriptions of new species of North American Formicidae. Proc. Ent. Soc. Philadelphia, 6:152-172, 335-350.
1866. Geological resources of Texas. Texas Almanac, Richardson & Co., Galveston, 10:63-66.
1866. Rivers and water power of Southwestern Texas. Texas Almanac, Richardson & Co., Galveston, 10:69-70.
1868. Mineral resources of Texas. Texas Almanac (for 1868), Richardson & Co., Galveston, pp.79-82.
1874. Geological and agricultural survey Texas. First Ann. Rept., Houston, pp. 15-77.
1875. Geological resources of Texas (etc.). Texas Scrap Book by Baker, New York, pp. 488-501.
1876. Geological and agricultural survey of Texas. Second Ann. Rept., Houston, 96 pp.
1876. Abstract of report. Amer. J. Sci., (3) 13:63-64.

Quintius Cincinnatus Smith

Smith was born in Humphreys County, Tennessee, and took his M. D. in Nashville in 1868. He was a distinguished physician, naturalist, meterologist, fellow in the American Association for the Advancement of Science and the Society of Science, Letters and Art of London. He was a member of the American Medical Association and the Texas State Medical Association, and a fellow of the California Academy of Science. He was an official meterological observer, probably for the Smithsonian, a member of the committee appointed to make the seventh decennial revision of the United States Pharmacopoeia. Before coming to Texas in 1880, he practiced in Missouri and California. He practiced in Austin from 1880-1905. He was an inventor of several surgical instruments. There is no suggestion in any of the biographical sources as to why he came from California to Austin. He seems to have taken little part in the Academy, perhaps because he had just arrived in Texas and was busy building a practice. During his 25 years in Texas he lived and practiced at the same two addresses in Austin: 627 Colorado Street and 1507 Colorado Street. He is listed in the Transactions of the 1892 Academy as a member but not a fellow. He published articles in state and

national medical journals, and in London. His most interesting article as a naturalist is "Woodpeckers and road-runners," published in *Science News*, 1:304, 1878. He moved to San Diego, California, in 1905 where he died in 1911 (Who's Who in America, 1908-1909:1760; Who Was Who in America, 1961-68:879; Geiser, 1945*a*:36, 1959:209).

Franklin L. Yoakum

Yoakum (Fig. 1) was born and reared in Yoakum Valley, Claiborne County, Tennessee. Geiser (1945*b*) stated that he came to Texas in 1840. The *Handbook of Texas* (Webb, 1952:945), however, recorded that he came to Texas with his two brothers in 1845, that his brother, Henderson King Yoakum, was a Senator from Tennessee in 1845, and that he established a residence in Huntsville, Texas, on 6 October 1845. The brother was a close friend and law partner of Sam Houston, which may account for Franklin Yoakum's expectation of political influence by naming Roberts the first president of the Academy. Most of the Tennesseeans who came to Texas during that time were from the same area and had attended Cumberland University. The only reference I've found to Franklin's formal education is his listing as "Dr. F. L. Yoakum, A. M., President" in the annual report of the Trustees of Larissa College for the school year 1859-60. In this report, he also is listed as Professor of Physical and Moral Science, Modern and Ancient Languages (Ford and Brown, 1951:51). At that time in Texas, it was not unusual for educators to be good but without much formal education. He is listed by Geiser (1945*b*) as having been a practicing physician in Limestone County. Sometime between 1850 and 1855 he became a minister in the Cumberland Presbyterian Church in Texas, and in 1855 he moved to Larissa as Rev. F. L. Yoakum, President of Larissa College. His administration during the period, 1855-1861 was a time of great prosperity for the community and the college. During this time he was an observer for the Smithsonian. His fame has rested mainly on his acquisition of an Alvan Clark astronomical telescope for the college, along with several microscopes and other laboratory equipment, and on the mystery of what happened to the telescope after the demise of Larissa College.

He was the driving force behind the organization of the Academy of Science of Texas in 1880 and its survival for almost 10 years. The other two founders seemed to have lent their prestige and names only to the enterprise. In the frontiers of natural science during that time, the acquisition of telescopes and microscopes for college and university laboratories placed educators in the forefront among such great naturalists as Agassiz and Gould (Lurie, 1960). It should be remembered that in the 1870s and early 1880s there was no University of Texas, and Texas A&M had just been established in 1876 as an agricultural and mechanical school. Small colleges like Larissa were important to the transplanted teachers and naturalists in the eastern part of Texas.

FIGURE 1. Dr. Franklin L. Yoakum, President of Larissa College, one of the founders of The Academy of Science of Texas 1880-1890 (from Ford and Brown, 1951).

In a privately published book, *Larissa* (Ford and Brown, 1951), a compilation of letters and interviews by people who lived in Larissa during Dr. Yoakum's presidency of the college, there are three versions of the acquisition of such a large telescope by such an insignificant college at that time, and guesses as to what happened to it. This unique book gives a good description of the character and personality of the prime founder of the first Texas Academy of Science. The college (Fig. 2) belonged to the Synod of the Cumberland Presbyterian Church. It was the forerunner of the present Trinity University in San Antonio.

From the Report of the Trustees to the Synod in 1959: "The President, who is also Professor of Physical Sciences reports that he will have mounted and ready for use, the large telescope, belonging to the apparatus by the first of December, next. Said telescope was made to order in the principle manufactory in the United States, under the management of Dr. Henry Fits, of New York, for Astronomical purposes, in Larissa College, at the cost of seven-hundred dollars. . ." (Ford and Brown, 1951:43).

From the memoirs of Mr. Ben Long of Bullard, Texas: "About the telescope, it is my belief that Dr. Yoakum bought the telescope himself. He had a negro boy they called Daniel and when they were buying that telescope, old Dr. Yoakum got my father to take that negro to Louisiana to sell him in order to buy a telescope, and I think he got $1000.00 for the negro. I know

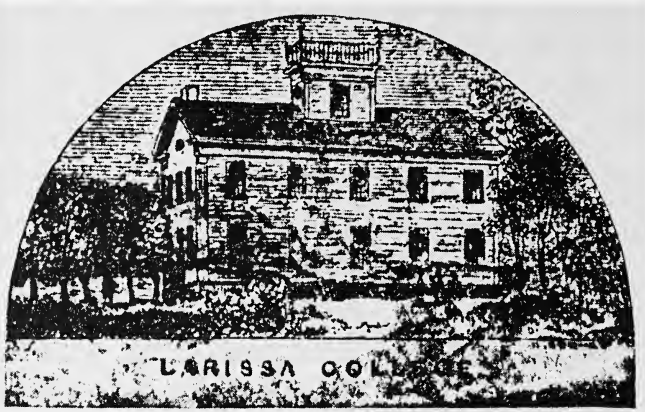

FIGURE 2. Larissa College, from the cover of the book *Larissa* (Ford and Brown, 1951).

my father took him off and sold him. I was there in college when they sold him and I was under the impression that the doctor paid for the telescope himself. I know he sent that negro boy off, saying that if the Trustees did not buy a telescope he would and the only way he had to buy it was to sell that negro" (Ford and Brown, 1951:127).

A letter to J. C. Brown, Jacksonville, Texas, dated 10 April 1915, from W. H. Pearson, an 1860 graduate of Larissa College: "In answer to your inquiries, will say that the big telescope was bought and donated to Larissa College by our good old friend, Thomas McKee, and cost $1000.00 in gold. The apparatus and the fixtures were bought by private donations from teachers and other good citizens....The telescope and other things belonging to Larissa College were transferred to Trinity University at Tehaucana, Texas..." (Ford and Brown, 1951:153).

Upon the final decline of Larissa College, which was concurrent with the opening of Trinity University, the big telescope, other scientific equipment, together with the collection of geological specimens were donated and transferred to Trinity University. An extract from the minutes of the Board of Trustees of the University states that "Professor Lowery having previously been requested to visit Larissa in the interest of the University, reported compliance, and that he had paid Dr. Yoakum $300.00 in gold (the amount required to secure certain donations from the doctor) and had received the following articles: large telescope, valued by the doctor at $1250; small telescope valued by the doctor at $10.00, magic lantern valued by the doctor at $50.00, other instruments, valued at $70.00, and a collection of about 50 volumes, no value assigned" (Ford and Brown, 1951:85).

The 1859-60 session was the last school year for Larissa until after the War Between the States. That year the college had 144 students enrolled and graduated four, its one and only graduating class. The Synod suspended classes for the duration. After four years, at the end of the war, friends of

Larissa College revived it under the direction of Dr. Yoakum. From the minutes of the Brazos Synod in 1865: "We note with pleasure that Larissa College has entered again upon its career of intellectual achievements...," and later from the Synod "Your Committee on Education report that the only institution under the care of the Synod is that of Larissa...." One year later the same Synod reported: "Larissa College having in effect gone into private hands [evidently Yoakum's], and the Synod having had no connection with it for years, we recommend that the connection previously existing between the Brazos Synod be and the same is hereby dissolved" (Ford and Brown, 1951:86).

Dr. Yoakum was a true generalist. In 1859, he imported Cashmere goats into Cherokee County (*Southern Cultivator*, p. 187) and about 1866 established a nursery at Larissa called "Yoakum and Company." Evidently after selling the remains of Larissa College in 1870 he moved his family and company to Palestine and resumed the practice of medicine (Geiser 1959:254). He was corresponding member of the St. Louis Academy of Science during the period 1870-1877. In 1880, he visited Trinity University and delivered two lectures, one on the Greek language and one on the Hebrew language. He had the old telescope brought out to the campus and gave a demonstration to a small group of students. Soon thereafter, the University was moved to Waxahachie and the telescope seems to have been lost in the move (Ford and Brown, 1951:75). It was in October of this year, 1880, that he met with Dr. Buckley and Dr. Smith in Austin and founded the Academy of Science of Texas.

Dr. Yoakum wrote many articles on horticulture and agriculture. During the middle 1880s, he seems to have kept the Academy alive with the showing of its museum, which consisted mostly of his personal collection.

Sometime in 1886, he moved to Tyler with the Academy Library and Museum. In 1886, he exhibited the Museum at the State Fair of Texas in Dallas, showing examples of Texas minerals, bird, fossils, marine shells, botanical specimens, insects, and so forth (*Texas Farm and Ranch*, 1 November 1886).

In July of 1887, the first annual meeting of the Texas State Horticultural Society was held in Tyler. Yoakum was an active member, along with most of the other members of the Academy. He was one of the main speakers at the meeting, presented an exhibit from the Academy Museum and entertained the delegates in his home where he exhibited his total library and collection. It could be that the organization of the State Horticultural Society contributed to the demise of the Academy, as did the coming of the United States Geological Survey into Texas, along with the organization of the Texas State Geological and Scientific Association in Houston by one of the Academy's original members, Edwin Theodore Dumble, in 1884 (*Texas Farm and Ranch*, 1 December 1884, p. 14).

Dr. Yoakum moved to Shreveport, Louisiana, sometime after November 1890 and died there in 1891. In January 1912, his son, B. F. Yoakum, helped Trinity University purchase land for an athletic field in Waxahachie. The site was named Yoakum Field (Ford and Brown, 1951:106).

With Yoakum's death the Academy itself ceased to be mentioned in any of the literature. There is no record of what happened to the Academy Museum and Library, which were evidently Dr. Yoakum's private property. During its heydey in Palestine there were about 100 members, from all over the state. It was on the Smithsonian list for distribution of publications. A list of Yoakum's publications follows.

1880. The cotton worm. U. S. Ent. Comm. Bull., 3:127-128 (reprinted in the Fourth Report of the Commission, 1885).

1882. Carp culture in Texas. Galveston Weekly News, 7 and 16 March (printed also in the U. S. Fish Comm. Bull. 2:28-32).

As a regular contributor to *Texas Farm and Ranch*:

1883. A word about apples, 15 September; Peaches, 1 December; Plowing deep, 15 December.

1884. The castor bean, 11 March and 1 April; Transplanting trees, 15 April; Transplanting, 1 May.

1885. Irrigation of plants and trees, 1 February; The castor bean, 15 March; Good or bad crops, 1 June; Gilbert's relief grass, 1 July.

1886. The McKee grape, 1 May; The castor bean, 15 October. Root blight or poison spots, 15 October.

1888. *Texas Journal of Horticulture* was published by Yoakum in 1888-1889. He sold it to Professor Thomas L. Bronk, horticulturist at Texas A&M, who published it as *Southern Horticulturist and Farmer* at Bryan in 1889-1890.

1889. In *Texas Farm and Ranch*: On planting a pear orchard, 1 February; American grapes, 1 June: Gardens and garden products, 1 July. The southern huckleberry, 15 July. The culture of silk in Texas, 1 May.

1890. The root blight of tap rooted exotic plants [a series], 15 January, 1 February, 1 March, 15 March, 1 May.

Several times during these publications there were references in *Texas Farm and Ranch* to Dr. J. L. Yoakum of the Texas Academy of Science.

The state officers referred to in the 1 December 1886 article in *Texas Farm and Ranch* along with Governor Roberts were Lieutenant Governor A. D. Sayers, State Treasurer Francis R. Lubbock, Land Commissioner William C. Walsh, draftsman Charles William Pressler, Associate Justice of the Texas Supreme Court Micajah Hubbard Bonner, and State Senator John Y. Gooch of Palestine. Selecting the politicians, most of whom were outstanding citizens and scholars, for special honors in hope of favorable government treatment of the fledgling academy was not unique with the three founders at that time, nor has the practice ceased among scientists. Most scientific organizations today welcome "lay persons' either as active members "interested in the advancement of science" or as "sponsors" or "corporate members," who are willing to pay higher dues to be listed as associated with such institutions. Others who joined the Academy after it was moved to Palestine were T. T. Gammage, J. N. Hunter, N. W. Hunter, L. W. Moore, and J. N. Reagan, all of Palestine and all lawyers. W. R. Maxwell, railroad

FIGURE 3. Oran Milo Roberts, Governor of Texas in 1878, first President of The Academy of Science of Texas 1880-1890 (from Wooten, *A comprehensive history of Texas 1685-1896*, William G. Sariff, Dallas, vol. 2, 1898).

man and amateur geologist, was also from Palestine. From Denison was Thomas Volney Munson, famous horticulturist. From Houston were E. F. Schmidt, Dr. E. Erlenmeyer, and Edwin Theodore Dumble. Also, J. F. Joor from Birdston, J. M. Glasco from Gilmer, T. W. Florer, Waxahachie, W. F. Cummins, Dallas, George H. Ragsdale, Gainesville, L. S. Millard, Bellville, Edmund Montgomery of Hempstead, William Rapp Howard, White Rock, and Gilbert C. Heron of Corsicana. Most of these except the lawyers and politicians were farmers, doctors, some cattlemen. All of them were amateur naturalists, rockhounds, or collectors of botanical specimens. Among them the following were distinguished by their work and publications.

Oran Milo Roberts

Roberts (Fig. 3) was born in July 1815. He was 65 years old and Governor of a state in the throes of establishing its first university when the Academy was founded, and he was elected its first president. He was an excellent lawyer and government leader, naturalist, and agriculturist. He was born in Laurena District, South Carolina, a graduate of the University of

Alabama, a member of the Supreme Court of Alabama, and served in the Legislature of Alabama. At the age of 26 he moved to San Augustine, Texas, to practice law. In 1841, he was appointed District Attorney by President Houston (Republic of Texas), and District Judge in 1846 by the first governor of Texas, J. Pickering Henderson. In 1857, he was appointed Associate Justice of the Texas Supreme Court. He served two years during the War Between the States. From 1864 to 1873, he practiced law in Tyler and Gilmer, where he conducted a law school. He was appointed Chief Justice of the Texas Supreme Court in 1874, where he served with distinction until 1878 when he was elected Governor, and reelected in 1880. Upon his retirement from government he was appointed Professor of Law in the University of Texas at Austin, of which he was one of the founders (Johnson and Malone, 1960).

He died in Austin on 19 May 1898. In view of his distinguished career as a naturalist, lawyer, teacher, governor, prolific writer, his legacy as the first President of the first Academy of Science of Texas is tremendous. However, he was not listed as a member or fellow of the 1892 Academy, though he was Professor of Law at the University at the time. Among his published works are the following (Geiser, 1959).

1870. The Grasses of Texas. Southern Farmer, 4:91-94.

1881. Description of Texas, its advantages and resources. Privately printed, 133pp.

1881. A description of future Texas: its advantages and resources, with some account of their development, past, present, and future. Gilbert Book Co., St. Louis, 133pp.

1898. The political, legislative, and judicial history of Texas for its fifty years of statehood, 1845-1895 (D. G. Wooten, ed.). William G. Scariff, Publisher, Dallas, 325pp.

Francis Richard Lubbock

Lubbock, ex-governor, was State Treasurer when the Academy was formed. He was born in Beaufort, South Carolina, on 16 October 1815. His formal education ended at age 14 when he went to work as a clerk in Charleston. He came to Texas at the age of 20 and opened a drug store in Volasco. He later moved it to Houston. He entered politics in 1837 as a clerk of the Texas Congress, was elected Lieutenant Governor in 1878 and remained in that position until 1891. His interest in science was as a pioneer poultry breeder. He died on 22 June 1905. His only publication that I can find is a an autobiography titled "Six decades in Texas, or memoirs of Francis Richard Lubbock" (Geiser, 1945*a*).

Charles William Pressler

Born in Kindelbruck, Thuringia, in 1823, Pressler worked in the Texas Land Office for many years as chief draftsman. He was an educator, cofounder of the German Free School Association of Austin. He produced in Galveston one of the first maps of Texas, which was known as "Pressler's Map of the State of Texas" on a scale of 16 miles per inch. It was widely

used by the explorers and rockhounds (Geiser, 1945*a*:36). He died in Austin in 1907.

Edmund Duncan Montgomery

Montgomery was born in Germany on 19 March 1835. He came to the United States in 1870 and joined a group of German "freethinkers' in Georgia, working for improvement of the status of freed Negroes. He came to Texas with his family in 1873 and purchased the old Liendo Plantation near Hempstead where he lived for the rest of his life as a recluse, taking little part in community affairs. He was more of a philosopher and experimentalist than a naturalist. Like Yoakum, he was enthralled with the microscope and spent most of his time with microscopic samples in his own laboratory. He was more or less secretive about his results. His writings were more philosophical than scientific but were published in the Transactions of the 1892 Academy of which he was an original member and President in 1903-1904 (Southwest Review, pp. 200-235, 1931). His publications are listed below in the Bibliography of the Publications of The Texas Academy of Science, 1882-1913. He died on 17 April 1911 in Hempstead.

William R. Maxwell

Maxwell was associated for years with the I. G. & N. Railroad at Palestine. He is listed by Cassino in 1880 as living in Palestine and as having died about 1889. The records of the Railroad were destroyed when the General Office of the Railroad was burned. He was an original member of the first Academy and of the 1892 Academy (Geiser, 1959:144).

Micajah Hubbard Bonner

Bonner was born in Greenville, Alabama, and attended college in Kentucky. He came to Marshall, Texas, in 1849, thence to Rusk, and on to Tyler where he practiced law. He was one of the founders of the Houston and Great Northern Railroad in 1866 and of Southwestern University in 1875. In 1856, he drafted the resolution for the Texas Legislature that provided for the first State Geological Survey of Texas. He was Associate Justice of the Texas Supreme Court in 1878. He died in Tyler on 28 November 1883 (Geiser, 1945*a*:36).

Thomas Volney Munson

Munson (Fig. 4) was the most world famous of the original members of the 1880 and 1892 Academies and along with Yoakum probably had the most influence on the development of science and the academies in Texas during the late nineteenth century. He was born in Fulton County, Illinois, on 26 September 1843. He earned the B.S. degree from the University of Kentucky in 1870, and was professor of science there in 1870-1871. Before

FIGURE 4. Thomas Volney Munson, famous horticulturalist and viticulturist, original member of The Academy of Science of Texas 1880-1890 and The Texas Academy of Science 1892 onward (from Maguire, *Texas: amazing but true*, Eakin Press, Austin, 1984)

coming to Texas he was engaged in the nursery business in Lexington, Kentucky, and Lincoln, Nebraska. In 1876, he came to Denison, Texas, where he established his famous and successful horticultural business and where he lived the rest of his life (Johnson and Malone, 1960; Webb, 1952:249-250).

He became famous for his work in horticulture and viticulture. He developed a vineyard and experimental grounds for growing grapes. He sought and experimented with American species of wild grapes resistant to the phylloxera pest that was detroying French grapes. In recognition of this work, he was awarded membership in the French Legion of Honor. He was a foreign corresponding member of the Société Nationale d'Agriculture de France and was awarded honorary membership in the Société Des Viticulteurs. He was a prominent member of many scientific and horticultural societies in America. He was founder and first presidnt of the Texas Horticultural Society and a contributor to the *Texas Farm and Ranch,* 1886-1895. He presented to the World's Fair in Chicago in 1893 what has come to be known as the most complete botanical display of the whole grape genus. He was a speaker and lecturer at many scientific societal meetings. He died in Denison on 21 Jan-

uary 1913. (Geiser, 1945*b*:64). He was a prolific writer of his science. The following list is not complete.

1880. Fruit culture in northern Texas. Burke's Texas Almanac, pp. 55-57. Also correspondence with Professor C. V. Riley, Amer. Ent. vols. 2 and 3.
1883. Forests and forest trees of Texas. Amer. J. For., 1:443-451.
1884. Trees peculiar to Texas. Trans. Mississippi Valley Hort. Soc., 2:47-51.
1886. American grapes Proc. Amer. Pomological Soc. (for 1885), 20:95-100.
1890. Classification and generic synopsis of the wild grapes of North America. U. S. Dept. Agric., Bull. Div. Pomology, 3:unpaged.
1891. Possibilities of our native grapes, Amer. Garden, 12:580-586, 658-661.
1899. Investigation and improvement of American grapes at the Munson Experiment Grounds near Denison, Texas, from 1876-1900. Bull. Texas Agric. Exp. Sta., 66:215-285.
1904. Grape culture in Texas. Texas Almanac, pp. 105-106.
1905. Breeding grapes. Proc. Amer. Breeders Assoc., 1:144-147.
1908. Improvement of quality in grapes. Proc. Soc. Hort. Sci., 3:19-24.
1909. Foundations of American grape culture. U. S. Dept. Agric., Orange Judd Co., New York, 252 pp.
1910. Single character versus tout-ensemble breeding in grapes. Amer. Breeders Mag., 1:274-279.
1912. Longavinbo and the mutation theory. Amer. Breeders Assoc., 7/8:444-448.
1886-1895. A list of the papers published in *Texas Farm and Ranch* during this time is given by Geiser (1945*b*). The articles span the whole subject of horticulture, not just that of grapes.

TEXAS STATE GEOLOGICAL AND SCIENTIFIC ASSOCIATION, 1884-1889 (THE HOUSTON ACADEMY OF SCIENCE)

In the 1 December 1884 issue of *Texas Farm and Ranch* there appeared on page 14 the following notice: The Texas State Geological and Scientific Association, principal office at Houston, has been organized and incorporated for the purpose of collecting information in regard to the geology, mineralogy and natural history of Texas, the promotion and encouragement of scientific study and investigation among the people of the state, and the establishment of a museum where the information obtained and specimens collected will be open to the citizens of the State and those who desire to imigrate to it.

This organization, sometimes referred to as the Houston Academy of Science, (Simonds, 1927:19), was founded by Edwin Theodore Dumble, one of the original Palestinian members of Yoakum's Academy of Science of Texas in 1882 and one of the founders and president in 1893-1894 of the 1892 Academy. The main purpose of the Association or Academy seems to have been to act as a lobbying organization for a provision by the Texas Legislature for a Geological and Mineralogical Survey of Texas. The Association petitioned the Legislature in February of 1885 for permission to conduct the Texas mineral exhibit for the World's Industrial Exhibition to be held at New Orleans that year (Ferguson, 1969:80). I find no record that such an exhibit was held. The Association submitted several bills to the Legislature that never came up for a vote. The Houston group continued to lobby for a geological survey, supported by Major J. W. Powell, Director of the United States Geological Survey, who in 1886 sent an assistant, Robert T. Hill, to help Dumble and his people lobby for such a bill. In fact, Powell, through Hill, promised Federal financial help should such a bill be passed. Finally, after several defeats in getting a bill before the Legislature, the Association prevailed on C. N. Richardson of Leon County to submit their bill on 17 April 1888, and it passed on 5 May 1888 (Ferguson, 1969:87). Dumble was appointed Director of the newly created Texas Survey. Immediately he hired the men who had worked with him in the Association as assistants in the Survey. Also, the Texas State Geological and Scientific Association immediately published a journal titled *Geological and Scientific Bulletin*, which existed in 1888-1889. Among the articles published were reports on the Geological Survey of Texas by Dumble and the other members of his Association. Thereafter, no more was heard of the Association.

Thus, during the time that Yoakum's Academy in Tyler was dying, the Academy of Houston, founded by some of Yoakum's original members, was flourishing, with expert help from the United States Geological Survey, the railroad companies, and the state officers whom Yoakum disparaged in his

account of the first Academy. The demise of the first Academy and the formation of the Texas State Survey through the efforts of the Houston Academy marked the passage of the domination of Texas science by the medics and naturalists to the geologists and the ensuing interests of the railroads and mining corporations. Dumble and the 14 men he appointed as assistants made an enormous number of surveys throughout Texas pertaining to the potential value of its resources and its water. All published either in the Association Bulletin or in the four reports of the Survey to the Texas Legislature, and all but five became founder members of the 1892 Texas Academy of Science:

Edwin Theodore Dumble

There are three excellent studies of the life and works of Dumble by Simonds (1927), Underwood (1965), and Ferguson (1969). More recently, Ferguson presented a paper on Dumble and the Third Texas Geological Survey at the 99th Annual Meeting of the Geological Society of America in San Antoinio, 10-13 November 1986.

Dumble (Fig. 5) was born in Madisonville, Indiana, on 28 March 1852. Underwood (1965) stated that his parents travelled by riverboat down the Ohio and Mississippi rivers and finally to Galveston when he was three months old, and that they settled in Galveston. Simonds (1927), however, stated that they settled in Houston. Perhaps they stayed a while in Galveston and then moved to Houston, where Dumble grew to adulthood and lived most of his life. He had little formal education. When he was 14 he attended Washington College (later Washington and Lee) at Lexington, Virginia, where he gave his home address as Galveston. He attended Washington for two years, returned to Houston (or Galveston) in 1868, and back to Washington in 1873-1874, where he studied mathematics, astronomy, and chemistry. Years later, after he became famous, Washington and Lee honored him with the bachelor of science degree in mining engineering, which he requested when they offered him the degree of Doctor of Science. Evidently he had no course in geology. He was a merchant. In the 1870s and 1880s he worked as a car accountant for the Texas Central Railroad, operated a drug store and assay office in Llano, Texas, worked in his father's glassware business in Houston, and as an accountant for other businesses. During this time, he had a home chemical laboratory for which he solicited business. Underwood (1965) gave the following account of Dumble's solicitation of laboratory work and his acquaintance with Dr. Buckley of the first Academy, of which Dumble became a member.

In his fifty-year reminiscing Dumble noted that "Just fifty years ago (1874) on my return from the university, I opened a small chemical laboratory in Houston. Dr. (S. B.) Buckley had been State Geologist for a year or two and I concluded to try to get some part of his chemical work. I went to Austin and called on him in his office and museum in the Capitol building.

FIGURE 5. Edward Theodore Dumble, founder of The Texas State Geological and Scientific Association 1884-1889, Director of the Geological Survey of Texas, member of The Academy of Science of Texas 1880-1890, second President of The Texas Academy of Science 1892-1913 (from Fairbanks and Berkey, *Life and letters of R. A. F. Penrose, Jr.*, Geol. Soc. Amer., New York, 1952)

"The extensive collection made by the Shumard brothers with Buckley as assistant had been scattered and partly destroyed during the Civil War, but on his appointment as State Geologist, Buckley had done what he could with their re-arrangement and had added largely to them from materials made by himself and party.

"As I went slowly through the large room...it was a revelation to me... the wealth of the mineral resources of Texas..." (from a speech by Dumble entitled "A dream of fifty years ago" at a testimonial dinner for him on his 72nd birthday in Houston).

The Texas Survey was abandoned by the Legislature in 1894, though Dumble hung on at the Capitol for a couple of years. He joined Southern Pacific Company in 1897, for which he worked as a consulting geologist until his retirement in 1925. In his biography for Who's Who in Engineering (p. 506, 1925). Dumble did not mention his Houston Academy, The Texas Academy of 1880, nor even the Academy of 1892 of which he was a founder

FIGURE 6. J. A. Udden, E. T. Dumble, and W. F. Cummins in East Texas, in 1916; Udden was Director of the Bureau of Economic Geology; Dumble and Cummins worked for the Bureau, both original members of the three Academies discussed (from Ferguson, 1981).

and a president, to which he presented papers at the many meetings that were published in the Transactions of the Academy. He does not list his memberships in several other societies.

He died in Nice, France, on 26 January 1927. His many published papers are listed in the University of Texas Bulletin 3232 (Sellards, 1954). His publications in the Texas Academy of Science are listed in the accompanying bibliography. His publications in the Association Bulletin in 1888-1889 and his Reports of the Texas Survey are listed at the end of this chapter.

Short biographies of some of the members of Dumble's Association, his assistants (see Fig. 6) in the Texas Survey, and members of the 1892 Academy follow.

Francis Whitemore Cragin

Born on 4 September 1858 in Greenfield, New Hampshire; B.S., Harvard, 1882: Ph.D., Johns Hopkins, 1899. Biologist, natural history, teacher at Colorado College. He was with the Dumble Survey in 1892-1893 (American Men of Science, 3rd ed., p. 150, 1921).

William Fletcher Cummins

Born in Missouri in 1840; came to Texas before the Civil War; lived in Dallas and Waxahachie. Cummins was assistant collector with E. D. Cope before joining the Dumble Survey (Geiser, 1959:118). See Fig. 6.

Wilhelm H. von Streeruwitz

Born in Mica, Bohemia; graduated Prague University in geology. He came to the United States in 1863 and was Professor in Engineering at Western University, Pittsburgh, Pennsylvania. He was with Dumble from the period 1888-1893. He was made Honorary Life Fellow by the 1929 Academy (Geiser, 1959).

Henry Hill Harrington

Born in Chickasaw County, Mississippi on 14 December 1859. Harrington was a graduate of Mississippi A&M College and held an M.S. from Rensselaer. He was State Chemist, 1899-1905. In 1905, he became president of Texas A&M College (Who Was Who in America, 4:409, 1968). He was made Honorary Fellow of the 1892 Academy. He published many papers on soil and water.

Theodore Bryant Comstock

Born in Guyahoga Falls, Ohio, on 27 July 1849. He held a B.S. and D.Sc. from Cornell. He was a mining engineer and geologist, a member of the California Academy of Science, and a member of the Dumble Survey, 1889-1891 (Who Was Who in America, 1:248, 1966).

William Kennedy

Born and reared in Scotland; attended the University of Edinburgh, but it is not known whether he graduated. Kennedy trained as a merchant marine, and was a banker in Canada where he became interested in geology. He came to Texas with the Dumble Survey in 1890 and remained in Texas after the Survey ended. He joined Dumble with the Southern Pacific Railroad, and later the Rio Bravo Oil Company. He went to Spindletop in 1901 to report on oil in Texas for the United States Geological Survey. Later he became chief geologist for the Lone Star Gas Company (Wrather, 1927:29-36).

Richard Alexander Fullerton Penrose, Jr.

Born in Philadelphia, Pennsylvania, 17 December 1863; graduate of Harvard in 1884 in chemistry, M.S. and Ph.D. from Harvard in natural history in 1886. Penrose (Fig. 7) came to Texas in 1888 as assistant geologist in the Dumble Survey and stayed in Texas for two years. Aside from his scholarly work in geology, Penrose is known for the unique fact that when he died in Philadelphia on 31 July 1931, a bachelor, he left the bulk of a

FIGURE 7. Richard Alexander Fullerton Penrose, Jr., famous geologist from Philadelphia. Came to Texas to join Dumble in The Texas State Geological and Scientific Association and in the Geological Survey of Texas (from Fairbanks and Berkey, 1952).

large estate to the Geological Society of America (Fairbanks and Berkey, 1952:107-139).

Robert Thomas Hill

Born 11 August 1858, in Nashville, Tennessee. Hill came to Comanche, Texas, in 1874 to work with his brother on a newspaper as a printer. His formal schooling ended with the sixth grade. He attended Cornell in New York spasmodically, leaving school several times to work with his brother and as a rock collector for the United States Geological Survey. He had been admitted to Cornell under the condition that he would take the entrance examinations in Greek and Latin, which he never did. At the end of his senior year he returned from his job with the U.S.G.S. and demanded his diploma from Cornell, which the University refused to grant. Later, when Hill had become famous as a Texas geologist, Cornell relented and sent him a diploma. Hill left the Survey in 1890, after helping Powell get the bill creating the Survey through the Legislature (Alexander, 1976).

Edgar Everhart

Born in Stokes County, North Carolina, on 8 April 1854. Everhart came to Texas as professor of chemistry (1884-1894) at the University of Texas at Austin. He was one of the founders and first president of the 1892 Texas Academy of Science. He left Texas and later became chemist for the Georgia State Geological Survey (1904-1910). He wrote an article for *Texas Farm and Ranch* entitled "Texas minerals," published on 1 May 1885, p. 7. He died in 1932. He was made an Honorary Fellow of the 1929 Academy.

Joseph Alexander Taff

Born in Ten Mile, Tennessee, on 20 November 1862. He held the B.S. degree in engineering from the University of Texas at Austin. He was assistant geologist for the Dumble Survey, 1889-1894, and worked for the United States Geological Survey, 1894-1909, after which he went to work for the Southern Pacific Railroad Company. In his biography (Who's Who in Engineering, p. 2042, 1925), there is a list of his membership in several scientific societies, but no mention of the Houston Academy or the 1892 Academy.

Publications of the Texas Geological and Scientific Association in their Journal titled Geological and Scientific Bulletin

1888

Coal in Texas. Wilhelm H. von Streetuwitz, Bull. 1, no. 2.
Mining districts in El Paso County (Texas). William Fletcher Cummins, Bull. 1, no. 2.
The Carboniferous formation in Texas. William Fletcher Cummins, Bull. 1, no. 3.
The Nacogdoches oil field. Edwin Theodore Dumble, Bull. 1, no. 3.
Origin of the shell mounds. Edwin Theodore Dumble, Bull. 1, no. 3.
Brown coal or lignites. Wilhelm H. von Streeruwitz, Bull. 1, no. 3.
Review of Nacogdoches oil. Edgar Everhart, Bull. 1, no. 4.
Irrigation and drainage. Wilhelm H. von Streeruwitz, Bull. 1, nos. 4-5.
Contributions from the chemical laboratory. Edgar Everhart Bull. 1, no. 5.
Notes on the iron ore deposits of eastern Texas. Edwin Theodore Dumble, Bull. 1, no. 5.
Notes on the Geology of western Texas. Robert Thomas Hill, Bull. 1, no. 6.
Geological survey of Texas. Edwin Theodore Dumble, Bull. 1, no. 7.
Sketch of the natural gas field near Brenham, Texas. G. R., Bull. 1, no. 8.

1889

Notes on the geology of Grimes County. G. R., Bull. 1, no. 9.
Gas wells at San Antonio. James L. Tait, Bull. 1, no. 10.
Notes on certain building stones of east Texas. Richard Alexander Fullerton Penrose, Jr., Bull. 1, no. 11.
Texas asphaltum. Edwin Theodore Dumble, Bull. 1, no. 11.
Petrified wood (Bastrop, Texas). Edwin Theodore Dumble, Bull. 1, no. 12.
Mines worked in Texas. Wilhelm H. von Streeruwitz, Bull. 1, no. 12.

Published Reports by Dumble and Assistants of the Texas Geological Survey

1888-1889. First Report of Progress, including reports by Streeruwitz, Cummins, Penrose, Jermy, Tait, Owen, and Greg.

1889-1890. Report of the State Geologist for 1889, including reports by Streeruwitz, Cummins, Hill, and Comstock.
1890. 2nd Annual Report.
1891. 3rd Annual Report, including reports by Streeruwitz, Comstock, Cummins, Kennedy, Taff, and Magnenat.
1892. 4th Annual Report, report of State Geologist for 1892.

The Third Geological Survey of Texas was officially terminated on 28 February 1894, though Dumble continued to work as State Geologist until 1899. He and his assistants dominated the new 1892 Academy through 1895 when the academics of the fast maturing University of Texas took over and the University practically adopted the 1892 Academy through 1912.

THE TEXAS ACADEMY OF SCIENCE, 1892-1913

On 9 January 1892, 14 scientists met in the Chemical Laboratory of The University of Texas at Austin and organized "The Texas Academy of Science." They elected a President, Vice-President, Honorary Secretary, Treasurer, and three members of a Council. They adopted a Constitution and set dates for regular monthly meetings, to be held in the Chemical Laboratory of the University. Following are excerpts from the Introductory Address to the first formal meeting on 6 February 1892, by the newly elected President, Dr. Edgar Everhart, former member of the Texas State Geological and Scientific Association, the Dumble Texas Survey, and probably of the Academy of Science of Texas 1880-1890, a copy of the Constitution adopted, and a list of the officers (TAS Trans. I (1), 1893).

Introductory Address

"For some time past there has been a feeling on the part of some of those here present that the time was ripe for the formation of a Scientific Association in this State....The professors of science, natural and exact, in this University, held an informal meeting in the early part of January and decided to send to various men engaged or interested in scientific work in Texas invitations to meet here on the ninth of January for the purpose of organizing a Scientific Society....The plan and scope of the Texas Academy of Science are intended to be somewhat similar to those of the National Academy of Sciences at Washington....We trust that in the near future this Academy of Science will be legally recognized by the State, and that a union profitable to both will be consumated...."

CONSTITUTION OF THE TEXAS ACADEMY OF SCIENCE
(9 January 1892)

Article I.—Name.

Section 1. This Association shall be called "THE TEXAS ACADEMY OF SCIENCE."

Article II.—Objects.

Section 1. The objects of the Academy are: To advance the natural and exact sciences both by research and discussion; to promote intercourse between those who are cultivating science in different parts of the State; and especially to investigate and report on any subject of science or industrial art, when called upon by any department of the State Government.

Article III.—Membership.

Section 1. The Academy shall consist of Members, Fellows, and Patrons.

Sec. 2. In order to become a Member the applicant must be recommended in writing by two Members or Fellows, approved by the Council, and elected by ballot of the Society. In order to be elected two-thirds of the ballots must be affirmative.

Sec. 3. Fellows shall be elected by the Council from such of the Members as are professionally engaged in science or have in any way advanced or promoted science.

SEC. 4. Anyone who contributes to the funds of the Academy the sum of five hundred dollars shall be classed as a Patron.

ARTICLE IV.—Officers

SECTION 1. The officers of the Academy shall consist of a President, a Vice-President, an Honorary Secretary, and a Treasurer. They shall be elected from the Fellows by ballot of the Academy at the June meeting of each year.

SEC. 2. The officers of the Academy, together with three Fellows to be elected by the Academy at the June session in each year, shall constitute a Council for the transaction of such business as may be assigned to them by the Constitution and By-Laws of the Academy.

SEC. 3. The President of the Academy, or in case of his absence the Vice-President, shall preside at the meetings of the Academy and of the Council; shall nominate all committees except such as are otherwise specially provided for; shall refer investigations required by the State Government to members especially conversant with the subject and report to the Academy at its next formal meeting; and with the Council shall direct the general business of the Academy.

SEC. 4. The Honorary Secretary shall conduct the Correspondence, advise with the President and Council in cases of doubt, and make a report at the formal meeting in June of each year.

It shall be the duty of the Secretary to give notice to the members of the place and time of all meetings, of all nominations for membership, and of all proposed amendments to the Constitution.

The minutes of each meeting shall be duly engrossed before the next meeting under the direction of the Secretary.

SEC. 5. The Treasurer shall attend to all receipts and disbursements of the Academy, giving such bond and furnishing such vouchers as the Council may require. He shall collect all dues from the members, and keep a set of books showing a full account of receipts and disbursements. He shall present a general report at the June session of each year.

ARTICLE V.—Meetings

SECTION 1. There shall be two formal meetings of the Academy each year, one of which shall be held in June at Austin, and the other within Christmas week at any place selected by the Council at the previous June meeting.

SEC. 2. The ordinary meetings of the Academy shall be at Austin on the first Saturday of October, November, December, February, March, April, and May.

Meetings of a more informal character may also be held on the third Saturday of these months.

ARTICLE VI.—Papers

SECTION 1. Intimation of the business of each meeting shall be given to each member by means of a printed card.

SEC. 2. No title of a paper can appear on the card, before the paper itself or an abstract of it has been approved by the Council or the Secretary.

SEC. 3. The Academy may provide for the publication, under the direction of the Council, of proceedings, memoirs and reports.

SEC. 4. The advice of the Academy shall be at all times at the disposal of the State Government upon any matter of science or art within its scope.

ARTICLE VII.—Assessments

SECTION 1. The admission fee for a Member shall be two dollars, and the admission fee for a Fellow five dollars, or an additional three dollars on promotion to Fellowship.

SEC. 2. The annual assessment shall be one dollar.

ARTICLE VIII.—Alteration of the Constitution

SECTION 1. No part of this Constitution shall be amended or annulled, except after notice given at a formal meeting, and approval by two-thirds of those voting at the succeeding formal meeting.

BY-LAWS

CHAPTER 1.—Membership.

1. No person shall be accepted as a Member or Fellow unless he pays his initiation fee and the dues for the year within three months after notification of his election.

2. An arrearage in payment of annual dues shall deprive a Member or Fellow of taking part in the management of the Society and of receiving the publications of the Society. An arrearage for one year shall be construed as a notification of withdrawal.

CHAPTER 2.—Election of Members.

1. Nominations for membership may be made at any time in due form to the Honorary Secretary.

2. The form of the nomination of Members shall be as follows:

In accordance with his desire, we respectfully nominate for membership in the Texas Academy of Science—

Full name: . . . . . .
Address: . . . . . .
Degrees, if any . . . . . .
Occupation . . . . . .
Branch of science engaged in, work already done, and publications, if any . . . . . .
Signed by two Members, or Fellows.

The Honorary Secretary will bring the nominations before the Council at its first meeting thereafter, and the Council will signify its approval or disapproval of each nomination.

The Honorary Secretary shall have lists or cards printed and sent to each Member, giving name of each nominee and such information as may be necessary for intelligent voting.

The Members and Fellows receiving the list will signify their approval or disapproval of each nominee, and return list to the Honorary Secretary.

At the next meeting of the Council, the Honorary Secretary will present the lists and the Council will canvass the returns and declare the results at the next succeeding meeting of the Academy.

CHAPTER 3.—Committee on Publication

The Council shall appoint a Committee of Publication, consisting of three members, of which the Honorary Secretary shall be chairman ex-officio, who shall decide upon the value of articles submitted to them for publication, and in case of doubt be authorized to call upon any member of the Society who is specially familiar with the branch of science treated of for assistance in such determination.

If the paper is accepted, the author must deposit with the Honorary Secretary a sufficient sum to defray publications charges, at a rate not exceeding $2.00 per octavo page, and pay for all cuts or illustrations. . .[at present the Academy bears most of the expenses of publication].

CHAPTER 4.—Order of Business

1. Call to order by Presiding Officer.
2. Statements by President.
3. Report of Council.
4. Report of Treasurer.

5. Election of Officers.
6. Declaration of results of election of Officers.
7. Report of Committees.
8. Announcements.
9. Unfinished Business.
10. New Business.

At the monthly meetings the order of business shall be:

1. Call to order by the President.
2. Statements by the President.
3. Presentation of memoirs, and discussion.
4. Report of Council.
5. Announcements.

TEXAS ACADEMY OF SCIENCE
Organized 9 January 1892

OFFICERS

President

E. EVERHART, Ph. D., Professor of Chemistry, University of Texas, Austin.

Vice-President

E. T. DUMBLE, State Geologist, Austin

Honorary Secretary

A. MACFARLANE, D. Sc., LL. D, Professor of Physics, University of Texas, Austin.

Treasurer

J. C. NAGLE, B. S., Professor of Physics and Engineering, Agricultural and Mechanical College, College Station.

Members of Council

G. B. HALSTED, Ph. D., Professor of Mathematics, University of Texas, Austin.
W. H. VON STREERUWITZ, C. E., M. E., State Geological Survey, Austin.
F. W. SIMONDS, Ph. D., Professor of Geology, University of Texas, Austin.

Regular Meetings

In the Chemical Laboratory of the University of Texas at 8 P.M.
Saturday, 6 February 1892.
Saturday, 5 March 1892.
Saturday, 2 April 1892.
Saturday, 7 May 1892.

The University of Texas professors mentioned in Everhart's introduction were: Edgar Everhart, chemistry, James R. Bailey, chemistry, George Bruce Halsted, mathematics, Alexander Macfarlane, physics, Frederic William Simonds, geology, Thomas Ulvan Taylor, applied mathematics, Robert Andrew Thompson, engineering. The other seven founders at the 9 January meeting were: James C. Nagle, physics at Texas A&M, R. B. Halley, natural

science at Sam Houston State College, Huntsville, Harold Yandell Benedict, astronomy, at the McCormick Observatory, University of Virginia, later University of Texas President, A. J. James, Dallas High School, science, J. F. Clark, scientist, Phoenix, Arizona, Edwin Theodore Dumble, State Geologist, and William von Streeruwitz, Texas State Survey.

Of these 14 founders, Everhart, Dumble, and Streeruwitz had been active members of the Texas State Geological and Scientific Association and of the Dumble Texas State Survey, Dumble had been a member of the 1880 Academy, and Everhart must have known both Yoakum and Munson of the 1880 Academy as he published in the *Texas Farm and Ranch* in 1884 when both of them were regular contributors.

Among the initial members of the Academy were William Fletcher Cummins, Edmund Montgomery, Quintius Cincinnatus Smith, and Thomas Volney Munson, all of whom had been members of the 1880 Academy. Munson and Smith were not made Fellows. Other initial members who had been with Dumble in his Association were Henry Hill Harrington, William Kennedy, and Joseph A. Taff. Of the seven University of Texas Professors among the founders five became Presidents. Macfarlane moved to Pennsylvania about 1894. Only Bailey was not elected, although he was Vice-President in 1909 when the incumbent President, McLaughlin, died (TAS Trans. XI:83-86).

The fledgling academy was off to a resounding start from the beginning. In his Presidential Address, Everhart assured the membership that this time academia would rule the new Academy. This was written into the Constitution by requiring that the monthly meetings be held in Austin. Not until November of 1911, as the Academy was falling apart, did the Council move to discontinue the monthly meetings in Austin.

The first year there were 22 Fellows and 39 regular members. Among these, in addition to founders Everhart and Munson, seven other members of the 1880 Academy were listed as members of the 1892 Academy in 1893. The membership was a broad cross-section of the scientific population of Texas: among them were 28 academics, six medics, eight geologists, five of them from Dumble's Association, three civil engineers, one pharmacist, and even one banker. Chemists, mathematicians, biologists, and physicists, were well represented. Exchanges with 20 United States and 15 foreign nations had been arranged, including Italy, Russia, Switzerland, France, England, Belgium, Ireland, Mexico, Austria, and Germany. Nine meetings were held and 36 papers read.

By the end of 1896, there were 141 members, 34 of them Fellows. One-hundred twenty-four papers had been read at 39 meetings, 37 of them in Austin, one in Galveston and one at Texas A&M in College Station. Thirty-four articles had been published as separates of Volume 1 of The Texas Academy of Science Transactions together with the Proceedings from the beginning of the Academy through 1896. Among the papers presented at the

meetings through 1896, five were biographies, 25 biology, 13 chemistry, 10 civil engineering, six economics, nine mathematics, nine medicine, five physics, two oil and gas, three psychology, and four science education.

On 6 March 1896, George W. Brackenridge of San Antonio, a Fellow of the Academy and a Regent of The University of Texas, donated $500 to the Academy, as did Mrs. G. B. Halsted (the only name given, evidently the wife of the then President of the Academy, George Bruce Halsted) of Austin. These two were the only patrons or donors listed throughout the 21 years of the Academy. The Treasurer's Report of 15 June 1896, listed total receipts of $1,227.04, which included the $1000 from the patrons, expenses of $378.62, the cost of printing separates for Volume I of the Transactions. Four-hundred dollars was invested in a certificate of deposit, leaving a balance of $853.42.

In 1897, the Council voted to stop printing separates, to print the Transactions for the year beginning with Volume II, with the Proceedings for 1898. Authors could order separates of their articles by paying extra (TP I(5):107). At that same meeting, they appointed a Publications Committee. The Academy never had an Editor, nor did the Constitution or By-Laws provide for one.

In 1899, Wesley Walker Norman, (Fig. 8) Professor of Biology at the University of Texas died. He was an original Fellow and had served the Academy from the beginning as Librarian and as a Secretary. He was responsible for the successful exchange program (TP III:300).

In 1900, the membership was 139, 47 Fellows and 92 regulars. There were 52 United States and 57 foreign exchange clients, among them 10 state academies. Thirty-three papers were read at eight meetings, with one meeting held at Baylor University in Waco. Seven of the papers were printed (TP IV, Pt.I).

In 1901, Article IX was added to the Constitution allowing local Sections of the Academy to be formed, with the approval of the Council. I find no record of any local or regional sections having been established (TP IV Pt.II(9):13).

Through the next 10 years the meetings remained stable. There was an average of about six meetings, 17 papers presented, five articles printed, and 150 members, per year. In 1903, for no apparent reason, there was an influx of 30 new members, 21 of them Fellows, but a loss in 1904 of 37.

In June of 1907, an agreement was reached between the Academy and the University of Texas whereby the library accumulated by the Academy and being housed by the University be given to the University. At that time, there were 59 foreign and 56 domestic exchange clients (TP X:70-71).

In 1911, the Academy published Transactions for 1908 and 1909 with Proceedings for 1908-1909 and 1909-1910. On page 86, a meeting listed as of 28 October 1910 where Dr. H. L. Hilgartner read the Presidential Address of Dr. James W. McLaughlin, Sr., because Dr. McLaughlin was

FIGURE 8. Wesley Walker Norman, Professor of Biology, The University of Texas. Librarian and Secretary for The Texas Academy of Science 1892-1913 (Trans. Texas Acad. Sci. 3, 1899).

unable to attend due to terminal illness, should have been listed as 18 October 1909. Dr. McLaughlin died on 13 November 1909 (Handbook of Texas, 2:1191, 1952). On the same page 86 of the Transactions, the 22 December 1910 meeting should have been listed as 22 December 1909. This was an emergency meeting of the Council to fill the unexpired term of Dr. McLaughlin, which term already would have expired in December, 1910.

It was at the 1909 emergency meeting of the Council that Dr. James R. Bailey, Professor of Chemistry and 1909-1910 Vice-President of the Academy resigned. Evidently, according to the Constitution, he should have automatically become acting President. He was the only one of the University of Texas founder professors who stayed with the Academy throughout the years and was never elected President. Instead, at that Council meeting, over which, according to their Constitution, he presided, Dr. William S. Sutton, L.L.D., Dean of the Department of Education of the University of Texas, was elected President to fill out Dr. McLaughlin's term. Even though there was no provision in the Constitution for the Council to elect an officer (TP XI:96-100).

FIGURE 9. Harold Yandell Benedict, Astronomer, Professor at University of Texas, President of the University 1927, President of The Texas Academy of Science 1892-1913, in 1911 President of The Texas Academy of Science 1929 in 1932, a founder of both (from *The W. J. McDonald Observatory of The University of Texas, Fort Davis, Texas,* Univ. Chicago Press, Chicago, 1939).

Only three meetings are listed as having taken place in 1910. One of them, the annual meeting on 18 November, where Dr. Sutton gave his Presidential Address, was used by Dr. Hilgartner to give a eulogy to Dr. McLaughlin. This physician seems to have been beloved and admired by all of the active members of the Academy, and his sudden death seems to have brought about a malaise among them.

Dr. Harold Yandell Benedict (Fig. 9), Professor of Mathematics at the University, one of the founders, and a later President (1927) of the University, appears to have stepped in and tried to save the Academy. By this time, the Council seems to have been running the affairs of the Academy with little participation by the membership. He was elected President to take over from Dr. Sutton in 1911. There were six meetings in 1911. At the 21 November meeting, the Council voted to discontinue the local monthly meetings in Austin and to hold the annual Christmas meeting in connection with the State Teacher's Association, beginning in 1912.

FIGURE 10. George Stronach Fraps, State Chemist and Professor of Chemistry, Texas A&M. Last President of The Texas Academy of Science 1892-1913 (from The Bryan Daily Eagle, 28, 1935).

On 23 February 1912, there was a meeting of the Council whereby a plan approved by the University of Texas Publications Committee to have "worthy" publications written by members of the Academy published as bulletins of the University. There was one other meeting of the Council on 18 May 1912, and an annual meeting on 8 June when George Stronach Fraps (Fig. 10), State Chemist and Professor at Texas A&M, was elected President for 1912-1913.

On 29 November 1912, the last meeting on record was held in the physics lecture room of the Fort Worth High School building, in connection with the State Teacher's Association, where Dr. Fraps delivered the last Presidential Address of the Academy.

The last Treasurer's Report that I could locate, dated 6 June 1912, listed cash on hand of $202.78. The University Librarian reported 55 United States and 52 foreign exchange clients. There were 58 Fellows and 79 members listed, seven articles printed, of which threee were published as bulletins of the University of Texas (TP XII Pt.I:38, Pt.II:111; bulletins numbered 184, 222, and 223).

Thus ended the meetings and publications of The Texas Academy of Science 1892-1913. Ten of the founders were still listed as Fellows in 1912, as were seven of the other original Fellows and 11 of the regular members. Of the 10 founders, seven were made Life Fellows during the organization of the 1929 Academy, two of them becoming Presidents. Nine regular members in 1912 became initial members in 1929.

The last printed Constitution published in 1911, a copy of which follows, shows an added provision for local Sections, a Librarian, and three additional chapters in the By-Laws, one of them setting up a permanent fund from lifetime dues payments.

One of the most frequently asked questions about the 1892 Academy has been "Why did it cease to exist?" In his discussion of this Academy, Geiser (1945*a*:35) wrote the following sentence: "Of the factors which brought about the demise of the Academy in 1922, I shall here make no mention, for that is another story." The 1922 date is certainly a typographical error because Geiser on the same page noted that it existed until 1912. If he ever disclosed those factors in published writing, none of my references contain such a discussion.

During the time of the Academy, the University of Texas itself, established in 1883, grew from infancy to a busy institution with about 500 students. The same people who were running the Academy were working full time teaching, researching, and running the University. In 1904, the Publications Committee began publishing a Scientific Series of bulletins and most of those who authored contributions in that series also published in the Transactions. In the period 1904-1914, there were 29 of the series published as University bulletins. The last published article in Transactions XII of the Academy was Bulletin no. 184, Scientific Series 18, published by the University in 1911.

William Battle Phillips, an active member of the Academy, was with the University Mineral Survey from 1901 to 1905, a geology professor and a mining engineer. He worked for several years to convince the University to establish a research unit as a geological survey directed toward Texas resources (Ferguson, 1981). In 1909, the Board of Regents of the University established the Bureau of Economic Geology and appointed Phillips its first Director. Phillips had brought Dr. Johan Udden (Fig. 6), geologist, to Texas as his assistant. The Bureau made Udden Director when Phillips left to become President of the Colorado School of Mines in 1914. With Phillips and Udden working to build the Bureau and at the same time being active in the

Academy, what Everhart had called "the practical scientist" in his Introductory Address, meaning "geologist," seems to have again taken over.

Certainly deeding the Library to the University and having the University print the research papers of the members as bulletins of the University left only the two meetings required in the revised Constitution as activities of the Academy.

By 1910, the railroads were bringing in more people, and national societies were beginning to form sections. There were more faculty members in the various disciplines, and these professionals could enjoy a fellowship previously offered by the Academy. My own unsupported guess is that the beginning of the end for the Academy took place on 22 December 1909, when the Council elected Dr. William S. Sutton to fill the unexpired term of their deceased President, and Dr. James R. Bailey resigned, but it is only a guess.

Whatever the reasons for the demise of the 1892 Academy and the long hiatus, nine of the surviving founders, including Dr. Bailey, were initial Fellows of the 1929 Academy, and one of them was President.

CONSTITUTION OF THE TEXAS ACADEMY OF SCIENCE (AS AMENDED 12 JUNE 1899, 10 JUNE 1901, AND 27 DECEMBER 1901)

ARTICLE I.—Name

SECTION 1. This Association shall be called "The Texas Academy of Science."

ARTICLE II.—Objects

SECTION 1. The objects of the Academy are: To advance the natural and exact sciences, both by research and discussion; to promote intercourse between those who are cultivating science in different parts of the State; and especially to investigate and report on any subject of science or industrial art, when called upon by any department of the State government.

ARTICLE III.—Membership

SECTION 1. The Academy shall consist of members, Fellows and Patrons.

SEC. 2. In order to become a member, the applicant must be recommended in writing by two Members or Fellows, approved by the Council, and elected by ballot of the Society. In order to be elected, two-thirds of the ballots must be affirmative.

SEC. 3. Fellows shall be elected by the Council from such of the Members as are professionally engaged in science, or have in any way advanced or promoted science.

SEC. 4. Anyone who contributes to the funds of the Academy the sum of five hundred dollars shall be classed as a Patron.

ARTICLE IV.—Officers

SECTION 1. The officers of tbe Academy shall consist of a President, a Vice-President, an Honorary Secretary, a Treasurer, and a Librarian. They shall be elected from the Fellows by a ballot of the Academy at the June meeting of each year.

SEC. 2. The officers of the Academy, together with the Past Presidents and three Fellows, to be elected by the Academy at the June session in each year, shall constitute a Council for the transaction of such business as may be assigned to them by the Constitution and By-Laws of the Academy.

SEC. 3. The President of the Academy, or, in case of his absence, the Vice-President, shall preside at the meetings of the Academy and of the Council; shall nominate all committees except such as are otherwise specially provided for; shall refer investigations required by the State government to members especially conversant with the subject, and report to the Academy at its next formal meeting; and, with the Council, shall direct the general business of the Academy.
SEC. 4. The Honorary Secretary shall conduct the correspondence, advise with the President and Council in cases of doubt, and make a report at the formal meeting in June of each year.

It shall be the duty of the Secretary to give notice to the members of the place and time of all meetings, of all nominations for membership, and of all proposed amendments to the Constitution.

The minutes of each meeting shall be duly engrossed before the next meeting, under the direction of the Secretary.
SEC. 5. The Treasurer shall attend to all receipts and disbursements of the Academy, giving such bond and furnishing such vouchers as the Council may require. He shall collect all dues from the members, and keep a set of books showing a full account of receipts and disbursements. He shall present a general report at the June session of each year.

ARTICLE V.—Meetings

SECTION 1. There shall be two formal meetings of the Academy each year, one of which shall be held in June, at Austin, and the other within Christmas week, at any place selected by the Council.
SEC. 2. The ordinary meetings of the Academy shall be at Austin during the months of October, November, January, February, March, April, and May, the place and dates to be fixed by the Council.
SEC. 3. The meetings of the Local Sections may be provided for in the "rules of their government."

ARTICLE VI.—Papers

SECTION 1. Intimation of the business of each meeting shall be given to each member by means of a printed card.
SEC. 2. No title of a paper can appear on the card before the paper itself, or an abstract of it, has been approved by the Council or the Secretary.
SEC. 3. The Academy may provide for the publication, under the direction of the Council, of proceedings, memoirs, and reports.
SEC. 4. The advice of the Academy shall be at all times at the disposal of the State government upon any matter of science or art within its scope.

ARTICLE VII.—Assessments

SECTION 1. The admission fee for a Member shall be two dollars, and the admission fee for a Fellow five dollars, or an additional three dollars on promotion to Fellowship.
SEC. 2. The annual assessment shall be one dollar.

ARTICLE VIII.—Alteration of the Constitution

SECTION 1. No part of this Constitution shall be amended or annulled, except after notice given at a formal meeting, and approval by two-thirds of those voting at the succeeding formal meeting.

ARTICLE IX.—Local Sections

SECTION 1. Local Sections of the Academy may be established by the Council on receipt of a request to do so signed by ten members of the Academy in good standing residing in the territory within which the Local Section is desired.

SEC. 2. Such Sections shall appoint their own officers and committees, and make any rules for their government not inconsistent with the Constitution and by-Laws of the Academy.
SEC. 3. The place of headquarters and definite territory selected by each Local section within which its membership must reside will be subject to the approval of the Council.
SEC. 4. Any Local Section may be dissolved by the Council for good and sufficient cause.

BY-LAWS

CHAPTER 1.—Membership

1. No person shall be accepted as a Member or Fellow unless he pays his initiation fee and the dues for the year within three months after notification of his election.
2. An arrangement in payment of annual dues shall deprive a Member or Fellow of taking part in the management of the Society and of receiving the publications of the Society. An arrearage for one year shall be construed as a notification of withdrawal.

CHAPTER 2.—Election of Members

1. Nominations for membership may be made at any time in due form to the Honorary Secretary.
2. The form of the nomination of Members shall be as follows:

In accordance with his desire, we respectfully nominate for membership in the Texas Academy of Science—
Full name: . . . . . .
Address: . . . . . .
Degrees, if any: . . . . . .
Occupation: . . . . . .
Branch of science engaged in, work already done, and publications, if any:
. . . . . .

Signed by two Members, or Fellows.

The Honorary Secretary will bring the nominations before the Council at its first meeting thereafter, and the Council will signify its approval or disapproval of each nomination.

The Honorary Secretary shall have lists or cards printed and sent to each Member, giving of each name nominee and such information as may be necessary for intelligent voting.

The Members and Fellows receiving the list will signify their approval or disapproval of each nominee, and return list to the Honorary Secretary.

At the next meeting of the Council, the Honorary Secretary will present the lists and the Council will canvass the returns and declare the results at the next succeeding meeting of the Academy.

CHAPTER 3.—Committee on Publication

The Council shall appoint a Committee on Publication, consisting of three members, of which the Honorary Secretary shall be chairman ex officio, who shall decide upon the value of articles submitted to them for publication, and in case of doubt be authorized to call upon any member of the Society who is specially familiar with the branch of science treated or for assistance in such determination.

If the paper is accepted, the author must deposit with the Honorary Secretary a sufficient sum to defray publication charges, at a rate not exceeding $2.00 per octavo page, and pay for all cuts or illustrations.

(At present the Academy bears a part of the expenses of publication.)

Chapter 4.—Order of Business

1. Call to order by Presiding Officer.
2. Statements by President.
3. Report of Council.
4. Report of Treasurer.
5. Election of Officers.
6. Declaration of results of election of Officers.
7. Reports of Committees.
8. Announcements.
9. Unfinished Business.
10. New Business.

At the monthly meetings the order of business shall be:

1. Call to order by the President.
2. Statements by the President.
3. Presentation of Memoirs, and discussion.
4. Report of Council.
5. Announcements.

Chapter 5.—Election of Officers and Other Members of the Council
(Added 12 April 1895)

The Honorary Secretary shall send to each member a circular letter including a list of the Fellows, with a request to send in a ballot nominating each officer and other members of the Council. The ballot must be received by the Honorary Secretary by May 15. The Council will select two from the three nominees receiving the highest number of nominations for each position, and prepare a ballot to be sent to each member of the Academy, in time to permit his vote being received previous to the June meeting, at which time the votes will be counted.

Chapter 6.—Permanent Members
(Added 11 January 1896)

Any Member of the Academy may become a "Permanent Member" on payment of fifty dollars; all "Permanent Members" to be free from all subsequent assessments.

The money received from this source shall be invested as a permanent fund, the interest of which may be used towards paying for the printing of the transactions of the Academy or for such other purposes as the Council may determine.

Chapter 7.—Proxies
(Added 3 October 1899)

A proxy may be used at a meeting of the Council only when necessary to constitute a quorum, and such proxy may be held only by a duly elected member of the Council.

PRESIDENTS OF THE TEXAS ACADEMY OF SCIENCE, 1892-1913

1892-1893. Edgar Everhart—biography in the section on the Texas State Geological and Scientific Association. Geiser (1945) suggested that he was considered the true "founder" of the Academy.

1893-1894. Edwin Theodore Dumble—biography in the section on the Texas State Geological and Scientific Association.

1894-1897. George Bruce Halsted—internationally known mathematician. Born in Newark, New Jersey, on 25 November 1893, died in 1922. He received B.A. and M.A. degrees from Princeton, and the Ph.D. from Johns Hopkins. He was Professor of Mathematics at the Univer-

sity of Texas in the period 1884-1902. He had many publications in the United States and foreign mathematical journals. He was an honored member of the American, French, and London mathematical societies (Johnson and Malone, 1960:163-164; Amer. Men Sci., 3rd ed., p. 284:1921).

1898-1899. Thomas Ulvan Taylor—born on 2 January 1858, died on 28 May 1941. A native Texan born in Parker County. He was among the first graduates of Sam Houston State Teachers College. He received the Civil Engineering degree from the University of Virginia in 1883 and from Cornell in 1885. He began teaching at the University of Texas in 1883 and was made Dean of Engineering in 1906. He had many publications on water and served as consultant to Texas towns and cities (Amer. Men Sci. 3rd ed, p.677, 1921; The Handbook of Texas 2:716, 1952).

1899-1900. Frederick William Simonds—Born in Charleston, Mississippi, on 3 July 1853, died on 27 March 1941. B.S. and M.S. Cornell, Ph.D. Syracuse. Professor of Geology University of North Carolina, Cornell, and Arkansas. Came to the University of Texas in 1890. A member of the Geological Society of America, American Association for the Advancement of Science, and Sigma Xi (Amer. Men Sci, 3rd ed., P. 627, 1921).

1900-1901. Henry Winston Harper—Professor of Chemistry at the University of Texas, listed as having M.D. degree. Not much is known of his background. He was not one of the founders of the Academy. He was a member of the Council, 1895-1898, and gave two papers in 1896. In one citation of Fellows, he is listed as from London.

1901-1902. James C. Nagle—Born in Richmond, Virginia, on 9 October 1865, died on 6 April 1927. B.S. and A.M. University of Texas; C.E. Pittsburgh University, 1892; M.C.E. Cornell, 1893. Nagle was a Professor of Engineering at Texas A&M 1890-1913. Worked for the United States Geological Survey, the Texas Board of Engineers, the U. S. Department of Agriculture, and for the railroads. He wrote *Field Manual for Railroad Engineers*, 1897 (The Handbook of Texas 2:258, 1952; Amer. Men Sci., 3rd ed., p. 501, 1921; Who Was Who in America, 1:886, 1966).

1902-1903. Robert Andrew Thompson—Born in New Waverly, Texas, on 11 July 1869. B.B., M.S., and C.E., University of Texas in 1892, 1893, and 1900 respectively. He was an instructor in civil engineering, University of Texas, in 1892-93 and 1897-98. Worked as engineer for railroad, for Texas and for California, for Water Board Texas, and as a consultant. He was a member of the American Society of Civil Engineers. In 1925, he was living in Dallas, Texas (Who's Who in Engineering, 2nd ed., p. 2081, 1925).

1903-1904. Edmund Duncan Montgomery—An independent philosopher and writer in Hempstead, Texas. His biography is in the 1880 Academy account.

1904-1905. Milton Brockett Porter—Porter was one of the original members and read a paper at the first formal meeting on 6 February 1892. At that time, he was listed as a B.S. from Sugar Land, Texas. Evidently he went to Yale for graduate work but retained his membership in the Academy. He was listed as instructor in mathematics at Yale, then later at the University of Texas. His only service in the Academy as an officer before becoming President was as a member of the Publications Committee during the same year he was elected president. (TAS Trans. I (2), 1903; TAS Trans. VII, p. 103, 1905)

1905-1906. Thomas H. Montgomery—Montgomery's name appears on the Fellows list for the first time in the Proceedings of the Academy for 1904. He received a doctorate from Berlin University in 1894, was Professor of Cytology at the University of Pennsylvania, 1898-1903, Head of the Department of Zoology at the University of Texas, 1903-1908, and returned to Pennsylvania as professor, 1908-1912. He published 27 papers on biology, and presented three of them to the Texas Academy. Evidently his international fame as a scientist propelled him to the presidency immediately.

1906-1907. Sidney E. Mezes—One of the original members, listed as a Fellow in the first Proceedings. He was a Professor of Philosophy at the University of Texas when the Academy was formed but was not one of the founders. He was listed in the membership of the Academy in 1912 as President of the University of Texas.

1907-1908. James E. Thompson—One of the original Fellows, not a founder, was Professor of Surgery in the University of Texas at Galveston.

1908-1909. Eugene Paul Schoch—Born in Berlin, Germany, in 1871. Received degree in chemical engineering in 1894 and A.M. in 1896 from the University of Texas, the Ph.D. in 1902. He was an instructor in chemistry at the University of Texas from 1897-1911 (Amer. Men Sci. 6th ed., p. 1249, 1988). He was a member of the 1929 Texas Academy of Science.

1909-1910. James Wharton McLaughlin—Physician, pioneer bacteriologist. Born near Springfield, Ohio, in 1840, and died on 13 November 1909 while President of the Academy. He received his M.D. degree from the University of Louisiana in 1867, was a member of the American Medical Association, and Professor of the University Medical School at Galveston. He published many articles in medical journals. It was on his death while President that the Academy began to fall apart (TAS Trans. XI:84, 1911; Handbook of Texas 2:119, 1952)

1910-1911. William S. Sutton—L.L.D., Dean of the Department of Education, University of Texas, selected to fill vacancy created by Montgomery's death. (TAS Trans. XI:86, 1911).

1911-1912. Harry Yandell Benedict (Fig. 9)—Born on 14 November 1869, died on 10 May 1937. He was the 10th President of the University of Texas. Born in Louisville, Kentucky, he came to Texas in 1877 and settled with his mother in Young County. He entered the University of Texas in 1888, graduated with B.S. in 1892, M.A. in 1893, and took his Ph.D. from Harvard in 1898. He was Professor of Mathematics and Astronomy at the University of Texas until 1927 when he became President of the University. He was an original member of the 1929 Academy and its third President (TAS Trans. XII:95; Amer. Men Sci., 3rd ed., p. 52, 1921; Who Was Who in America 1:32, 1966).

1912-1913. George Stronach Fraps (Fig. 10)—Born in Raleigh, North Carolina 9 September 1876. He received a B.S. from North Carolina State College in 1896 and Ph.D. from John Hopkins in 1899. He came to Texas A&M in 1903 as Professor of Chemistry and State Chemist. He was the last President of the 1892 Texas Academy of Science, but an active member of the 1929 Academy (Amer. Men Sci., 6th ed., p. 480, 1938; 7th ed., p. 597, 1944; TAS Trans XII:95, 1913).

Some of the records in the Transactions published by the Academy are scrappy. Unless the person was nationally or internationally known there was little information about that individual in the sources available to me.

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Subject Index
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THE TEXAS ACADEMY OF SCIENCE, 1929-1988

On 12 November 1929, five professor scientists met in San Antonio and signed a Letters of Incorporation, chartering a resuscitation of the defunct Academy of 1892 (TP XIV:iii). Preparation of such a charter and the accompanying constitution had been going on for about a year according to a report of the Treasurer for 29 November 1928 to 30 November 1929. One of the signatories, Charles Noble Adkisson, listed himself a Vice-President of the Academy in 1928 (Amer. Men Sci., 1955).

Adkisson was 64 years old, a physicist, and professor at Texas State College for Women in Denton. He was born in Shelbina, Missouri, held an A.B. from Center College in Missouri and an M.A. from Southern Methodist University, 1927. He had been professor at Polytech College in Fort Worth, Granbury College, and Terrell University before joining Texas State College for Women in 1903. The other four signatories of the Charter are listed below.

Clyde Theodore Reed, 38 years old, a biologist, born in Neosha, Missouri. He received his A.B. from Campbell College, Missouri, in 1914, an M.S. from Washington College, 1918, and an M.S. from Cornell in 1937. He was professor of biology in several colleges before coming to Texas State College for Women in 1921 and to Texas College of Arts and Industries at Kingsville in 1925 (Leaders Amer. Sci., 1969; Amer. Men Sci., 1949). He was the first president of the new Academy. In his vita (Amer. Men Sci., 1944), he listed his presidency of the Academy as 1927, 1928.

W. Joseph McConnell, 47 years old at the time of the signing, professor of mathematics and economics, also administrator, was born in Batesville, Arkansas. He had a B.A. and M.A. from the University of Denver in 1915 and 1918, respectively, and a Ph.D. from Columbia in 1925. He came to North Texas State College in Denton in 1916, was dean, then president of the college, 1934-1951 (Who's Who South and Southwest, 1952).

John Kern Strecker, 55 years old at that time, a biologist, was born in Waterloo, Illinois. He received the B.S. from Baylor in 1925 but had been a curator of the Baylor Museum since 1903. He was the second President of the new Academy and the only one of the five I find listed as having been a member of the 1892 Academy (Who Was Who Amer., 1966).

Harris Braley Parks, 51 years old, a botanist, entomologist, and agriculturist, was born in Carlinsville, Illinois. He held the B.S. degree from Blackburn College, Missouri. He was a curator of the museum as well as scientist and teacher at Texas A&M Experiment Station, San Antonio, from 1922 to 1949 (Amer. Men Sci., 1949). Parks listed himself as Secretary of the Academy from 1928 to 1933.

In the years, 1928 and 1929, these men seem to have convassed the scientific community in Texas, collected dues, written a charter and a constitution, selected officers for 1929-1930, Reed for President, McConnell a Vice-

President, and Parks as Secretary-Treasurer, and the five of them as a Board of Directors managed the Academy with San Antonio as headquarters. Though not as distinguished as the three founders of the 1880 Academy, the five founders of the 1929 Academy were much like them in their naturalist outlook and interest in museums. There were 42 Fellows and 64 members listed in the 1929-1930 report. Of these only 19 Fellows had been members of the 1892 Academy.

In the Preamble of the Constitution (a copy of which follows) it was claimed that because a majority of the members of the new Academy had been members of the 1892 Academy, the Constitution of 1892 could be declared null and void. I find no record that any of the 1892 members paid dues after 1912. According to the 1892 Constitution, an arrearage in payment of dues deprived a member or Fellow of taking part in the management of the Society and "An arrearage for one year shall be construed as a notification of withdrawal." In Article VIII, Section 1, "No part of this Constitution shall be amended or annulled, except after notice given at a formal meeting and two-thirds of those voting at the succeeding formal meeting."

In Article 3 of the Preamble to the 1929 Constitution, whatever funds remained in the treasury of the old organization were to be transferred by the last Secretary-Treasurer to the present Secretary-Treasurer. In a list of officers for 1912-1913 in the Proceedings for 1910-1912, the Treasurer was listed as F. L. Whitney. In the Report of the Treasurer for the year 1911-1912, E. H. Bantel, then Treasurer, reported a balance of $234.33, as of 6 June 1912. The then Auditor, Edward Dodd, on the same page reported an extra disbursement of $31.55, leaving a balance on 6 June 1912, of $212.78. All three of these former officers were active participants in the new Academy as Fellows. All of the officers, Fellows, and members of the various Academies of Science of Texas through the more than 100 years reported here were overly meticulous in their accounting of revenues and expenditures of the Academy they served. They were all full-time teachers, researchers, or professionals. The extra time they spent with Academy affairs was a labor of love. Had there been any money left from the old Academy, the three would have turned it over to the new Treasurer. The $202.78 probably was needed for the final meeting in Fort Worth and the paying of other expenses. In his first report, November 1929, H. B. Parks listed $240.00 as receipts from fees and dues. There is no mention of any other revenue.

In Article 4 of the Preamble to the new Constitution, the publications to be issued by the Academy were to continue the series of the 1892 Academy, which ended with *Transactions of The Texas Academy of Science for 1910-1912, together with the Proceedings for the same years,* volume XII, Austin, Texas, 1913. The truly distinguished scientists who rejunevated the Academy, composed the Constitution and By-Laws, continued the series with the *Transactions of the Texas Academy of Science May 29, 1929, to*

November 30, 1929, together with the Proceedings for the same time, volume XIV, San Antonio, 1930. Together with the new Constitution, Letters of Incorporation, lists of officers, notice of the first meeting at Texas A&M College, and a list of the membership, a 200-page handbook on Texas cacti by Ellen D. Schulz and Robert Ruyon was the first publication of the new Academy.

Number 4 of the Letters of Incorporation stated "The term for this corporation is to exist is fifty years." There is no mention in any of the ensuring revised constitutions of this limitation wherein the Academy was to cease to exist in 1979.

LETTERS OF INCORPORATION

THE STATE OF TEXAS,
COUNTY OF BEXAR.

We, the undersigned resident citizens of the State of Texas, do hereby voluntarily associate ourselves together for the purpose of forming a private corporation for purposes herein set forth, to-wit:

1.—The name of this corporation shall be "The Texas Academy of Science."

2.—The purposes for which this corporation is formed are:—To stimulate scientific research, to promote fraternal relationship among those engaged in scientific work, especially in Texas; to diffuse among the citizens of the State a knowledge of the various departments of science; to investigate and report on any subject of science or industry when called upon by any Department of the State Government; to arrange and prepare for publication such reports of investigation and discussion as set forth in these articles; to collect, arrange and exhibit articles of scientific worth; to acquire and arrange for use a library of scientific literature; to acquire relics, mementos and articles of scientific interest; to maintain a museum in which these collections shall be available to the Academy and to the public with such restrictions as are placed on similar public institutions.

3.—The place where the principal business of this corporation is to be transacted is in San Antonio, Bexar County, Texas, or such other points as may be deemed expedient by this corporation.

4.—The term for which this corporation is to exist is fifty years.

5.—This corporation shall be managed by a board of five directors. The names and residence of those selected to serve the first years are as follows:

Clyde T. Reed, Kingsville, Texas
C. M. Adkisson, Denton, Texas
J. K. Strecker, Waco, Texas
W. J. McConnell, Denton, Texas
H. B. Parks, San Antonio, Texas

6.—This corporation shall have no capital stock; and it owns no goods, chattels, lands, rights or credits.

IN WITNESS WHEREOF we have hereunto subscribed our names on this the 12 day of November, A.D. 1929.

Clyde T. Reed,
C. N. Adkisson,
W. J. McConnell,
J. K. Strecker,
H. B. Parks.

PREAMBLE

BE IT KNOWN TO ALL PEOPLE:—That we, the undersigned, desire to aid in the advancement of the present state of knowledge, to help in the dispersion of what is now recorded and to form an association for mutual betterment, do hereby adopt the following Constitution and By-Laws.

BE IT FURTHER KNOWN:—That an organization, entitled the Texas Academy of Science, was organized in 1892 with these same objects in view and continued in active operation up to 1912; that we know and are aware of the life and activities of that organization, and desiring to continue their good work, we have adopted the name, Texas Academy of Science and have modified the original constitution to the present need.

BE IT FURTHER KNOWN:—That in the personnel of the present organization there are, by their own will and action, a majority of the remaining members of the original organization and that no legal obstruction exists, therefore the following articles are adopted:

Article 1.—This constitution shall take precedence over and make null and void the original constitution of the Texas Academy of Science and any and all revisions of and amendments thereto.

Article 2.—All members and fellows of the old academy shall upon meeting the provisions of this constitution be regarded as members and fellows of The Texas Academy of Science under the present constitution.

Article 3.—Further, whatever funds remained in the treasury of the old organization shall be transferred by the last secretary-treasurer to the present secretary-treasurer. Any and all property still belonging to the original organization shall become the property of the present Academy and subject to the provisions of this Constitution.

Article 4.—All publications that may be issued shall be numbered so as to continue the series already published and shall conform to this series in size, makeup, and character of contents.

CONSTITUTION AND BY-LAWS, 1929

Article I.—Object

Section 1.—Name.—This organization shall be called "The Texas Academy of Science."

Section 2.—Purposes—The purpose of this Academy shall be to stimulate scientific research, to promote fraternal relationship among those engaged in scientific work, especially in Texas; to diffuse among the citizens of the State a knowledge of the various departments of science; to investigate and report on any subject of science, or industry when called upon by any department of the state government; to arrange and prepare for publication such reports of investigation and discussion as set forth in these articles.

Article II.—Membership

Section 1.—Classification.—The membership of this Academy shall be composed of active members, fellows, honorary members, and patrons.

Section 2.—Eligibility.—Any person engaged in scientific work or interested in the promotion of science shall be eligible to membership.

Section 3.—Active Members.—Active members may be annual members or life members. Annual members may be elected at any meeting of the Academy. To become an active member, the candidate will fill in the application form of the Academy, which when signed by two fellows and accompanied by the entrance fee and one year's dues shall be sent to the secretary, who will enroll the applicant as an active member subject to confirmation by election at the

regular meeting of the Academy. They shall sign the constitution, pay their admission fee, and their annual dues before they are declared members. Any person who shall contribute twenty-five dollars (fifty dollars after 1932) to the funds of this Academy may be elected a life member of the Academy, free from assessments.

Section 4.—Fellows.—Any member of this Academy who is actively engaged in scientific research or the administration of scientific pursuit may be elected a fellow. To become a fellow, the candidate must have held membership in the Academy at least one year prior to his application for fellowship. His application must be signed by two fellows who are acquainted with the experience and achievement of the candidate. He must present to the Academy for permanent file a copy of a publication of merit of which he is the author. When these requirements are met, the Executive Council will present the candidate to the Academy at the annual meeting. If he receives two-thirds vote, pays a fellow's fee of three dollars and the annual dues he is declared a fellow. All who were fellows in the former Academy may become fellows upon election to membership in the present Academy.

At the annual meeting for 1929 the members of the Executive Council and fifteen others shall be elected as the original fellowship. The group will be required to pay the fellow's fee and file the publications. The secretary shall prepare a list of fifteen members who are eligible for this first selection.

Section 5.—Honorary Members.—Anyone who has rendered distinguished service to the Academy or to Science may be elected an honorary member. This honor carries with it neither obligations or privileges.

Section 6.—Patrons.—Any person who shall at one time contribute one hundred dollars (five hundred after 1932) to the funds of this Academy may be elected a patron, who is a life member of the Academy and free from dues.

Section 7.—Dues.—The annual dues for the Academy shall be one dollar per year payable on or before the annual meeting. An entrance fee of two dollars must accompany every application for election into the Academy. A fee of three dollars must be paid by a member at the time he is elected to a fellowship.

Article III.—Sections

Section 1.—The Academy shall be divided into sections according to the major interests of its members. The present division shall be:

Section 1.

A (Mathematics), B (Physics), C (Chemistry), D (Astronomy), M (Engineering).

Section 2.

E (Geology and Geography), F (Zoological Sciences), G (Botanical Sciences), N (Medical Sciences), O (Agriculture).

Section 3.

H (Anthropology), I (Psychology), K (Social and Economic Sciences), L (Historical and Philological Sciences), Q (Education).

(The divisions given correspond to, and are lettered the same as the divisions of the American Association for the Advancement of Science).

Section 2.—Each section shall elect one of its members as a Vice-President of the Academy.

Section 3.—A section may elect officers to serve its own organization providing such action is done with the approval of the Executive Council of the Academy.

Section 4.—Members shall designate the section to which they belong. A member may change from one section to another, provided that he notifies the Secretary of such a change at least two weeks prior to the annual election. He may take part in the work of two or more sections but in no case shall he vote except in the section he has designated. The Executive Council is authorized to make redivisions of the sections, when this need shall arise.

Article IV.—Inter-Organization

Section 1.—Local Chapters.—The Academy may establish through the Executive Council a local chapter on receipt of a request to do so signed by ten members of the Academy in good standing, residing in the territory within which the club is desired.

Section 2.—Officers of Local Chapters.—Such chapters shall appoint their own officers and committees and may make any rules for their government not inconsistent with the Constitution and By-Laws of the Academy.

Section 3.—Territory.—The place of headquarters and definite territory selected by each Chapter within which its membership shall reside will be subject to the approval of the Council.

Article V.—Affiliated Organizations

Section 1.—Conditions.—Any organization now existing within the state, having a membership of more than ten and an object in organization which meets the approval of the Executive Council of this Academy may become an affiliated organization upon the approval of the Executive Council.

Section 2.—Manner of Affiliation.—The organization desiring affiliation must make application to the Secretary of the Academy for a certificate of affiliation. With the application there must be, at least ten (10) applications for membership into the Academy of Science from among the members of the organization, each accompanied by the dues for one year in the Academy. On receipt of the application, membership dues and upon proper election to membership in the Academy of such applicants, the certificate will be granted. Additional members of this organization may become members of the Academy without election by presenting evidence of membership in the affiliated body in place of the usual entrance fee and the payment of the annual dues of one dollar per member. Any organization now existing within the state among whose membership are ten or more, who are members in good standing and regular standing in the Academy, may secure a certificate of affiliation by application and presenting evidence of membership in both organizations of at least ten persons. Other members of such an organization have the privilege of becoming members of the Academy without the payment of the entrance fee.

Article VI.—Executives

Section 1.—Officers.—The officers of this Academy shall be a President, a Vice-President for each section and a Secretary-Treasurer. These officers shall perform the duties usually devolving upon such officers in similar associations. All officers of the Academy must be elected from the fellowship.

Section 2.—Executive Council.—The President, the Vice-Presidents, the Secretary-Treasurer and the retiring President shall constitute the Executive Council which shall transact any necessary business of the Academy not specifically provided for in this Constitution. At any meeting of the Executive Council three members are authorized to transact business provided that sufficient notice is before sent to all members of the Executive Council.

Section 3.—Board of Directors.—In order that the Texas Academy of Science may comply with the charter granted by the State of Texas and thereby make legal the actions of this body, a board of five directors will be chosen at each annual meeting. All directors shall be ex-officio. The Board shall consist of the elected officers. The President shall be the chairman of the Board. This Board shall have authority in all the legal relations of the Academy.

Section 4.—Term of Office.—All elective or appointive officers, with the exception of the Secretary-Treasurer, shall hold office until the succeeding annual meeting. The Secretary-Treasurer shall be elected for a period of two Academy years. The Executive Council shall fill by appointment all vacancies that arise.

Article VII.—Committees

Section 1.—Program Committee.—There shall be a program committee to consist of the Secretary-Treasurer of the Academy as Chairman, and the Vice-Presidents of the sections with such other persons as may be appointed by the President. The program committee shall arrange for the meetings of the Academy, as constitutionally provided and for such other special meetings as may be called by the Executive Council.

Section 2.—Publication Committee.—This committee shall consist of the Vice-Presidents of the sections, the Secretary-Treasurer and the authors of the papers to be issued. The Secretary-Treasurer shall be the chairman. This committee shall have the power to pass on all papers offered for publication.

Section 3.—Auditing Committee.—The President shall appoint at each meeting two members of the Academy not otherwise officers who shall audit the accounts of the Treasurer and report before the adjournment of the meeting.

Section 4.—Legislative Committee.—The Executive Council may appoint a standing committee on legislation whose duties shall be to familiarize itself with proposed legislation on matters of scientific interest, and to represent the Academy in dealing with any legislative proposals of interest to the Academy.

Section 5.—Nomination Committee.—At the opening of each annual meeting the President shall appoint a committee to present nominations for all officers and fellows to be elected.

Any section, district, club, or affiliated organization may present nominations for fellowship to this Committee.

Section 6.—Publicity Committee.—This committee shall consist of three members appointed annually by the President. It shall be the duty of this committee to place the Academy and its work before the people of Texas in the most favorable way possible and to keep the public advised of the achievements and undertakings of the Academy and its members. Also, to serve as press representatives of the Academy at all times. All official statements must be passed upon by the President or, in his absence, the Secretary-Treasurer, before releasing to the press.

Section 7.—Membership Committee.—This committee shall consist of three members, appointed annually by the President. It shall cooperate with the Secretary-Treasurer in increasing the membership of the Academy.

Section 8.—Special Committee.—The President may at any time appoint any special committees that he may deem necessary or advisable. Such committees shall not function longer, without re-appointment, than the term of the President creating them.

Article VIII.—Procedure

Section 1.—Meetings.—The annual meeting of this Academy shall be held on the Friday and Saturday following Thanksgiving each year, unless otherwise ordered by the Executive Council, and at such a place as said Council may deem convenient or expedient. Other meetings of the Academy may be called at the discretion of the Executive Council, provided that the election of officers may occur only at the regular meetings.

Section 2.—Amendments.—This Constitution may be altered or amended at any annual meeting of the Academy by a three-fourths majority of the attending members of at least one year's standing; provided that no such question of amendment shall be decided on the day of its presentation.

BY-LAWS

1.—The President shall deliver a public address at one of the sessions of the annual meeting at the expiration of his term of office.

2.—The time alloted to the presentation of a single paper shall not exceed fifteen minutes except as provided for by the program committee.

3.—The order of business of the Academy shall be:—(1)—Call to order. (2)—Statements by President. (3)—Reading of the minutes of the previous meeting. (4)—Appointment of committees as may be necessary, and hearing of any and all proposed amendments to the Constitution or By-Laws. (5)—Program. (6)—Reports of officers. (7)—Reports of Executive Council. (8)—Reports of standing committees. (9)—Reports of special committees. (10)—Unfinished and deferred business. (11)—New Business. (12)—Announcements and miscellaneous business. (13)—Election of officers. (14)—Election of fellows. (15)—Election of members. (16)—Adjournment.

4.—Ten per cent of the membership in good standing shall constitute a quorum for transaction of business.

5.—Money received through contributions of patrons and life members shall be invested as a permanent fund, the interest on which may be used toward paying for the printing of the transactions of the Academy or for such other purpose as the Council may determine.

The fledgling Academy held its first annual meeting at Texas A&M College, College Station, 29-30 November 1930. Ten papers were presented, five were read by title, and there was one lecture open to the public. Of the 15 papers presented, eight were in biology. The Treasurer reported fees and dues from 76 members.

On 5 June 1931, a dinner at the University Commons in Austin was held honoring the founders of The Texas Academy of Science 1892. Printed invitations were sent to members and probably prospective members (Fig. 11). About 100 people attended the dinner. Founders honored and probably present were Bailey, who had resigned during the 1909 emergency Council Meeting when Sutton was appointed interim President instead of Bailey who was Vice-President at the time; Benedict, Clark, Everhard, Halley, James, Simonds, Taylor, and Thompson. Dumble, Halsted, McFarlane, Nagle, and Streeruwitz were deceased. There is no doubt that Benedict, now President of the University of Texas and President-elect of the Academy, promoted the dinner. He was one of the most active members of the defunct Academy, a noted astronomer, mathematician, and administrator, responsible for the "most wonderful" telescope of Texas being in the McDonald Observatory since Yoakum, founder of the 1880 Academy, brought the famous telescope to Larissa College. Both were devoted naturalists, astronomers, and educators. Thus was The Texas Academy of Science of 1929 brought into the folds of academia.

By the time of the second annual meeting in San Antonio, 27-28 November 1931, with Strecker as President, the Academy had collected fees and dues, and sales of old publications, probably the Transactions of the 1892 Academy, of about $500.00, quite good for an organization with annual dues of one dollar. Twenty-one papers were presented, 77 Fellows

You are cordially invited to attend an informal dinner at the University Commons, Friday Evening, the fifth of June, at seven o'clock, honoring the Founders of the Texas Academy of Science.

At this dinner life membership certificates will be presented to those who participated in the first meeting of the Academy nearly forty years ago.

Texas Academy of Science

Founders' Dinner

HONOURING THOSE PIONEERS IN TEXAS SCIENCE WHO FORTY YEARS AGO NEXT JANUARY ORGANIZED THE ACADEMY

University of Texas
June 5, 1931

FOUNDERS OF THE TEXAS ACADEMY OF SCIENCE

JAMES R. BAILEY
H. Y. BENEDICT
JAMES F. CLARK
E. T. DUMBLE*
E. EVERHART
R. B. HALLEY
G. B. HALSTED*
A. J. JAMES
ALEXANDER McFARLANE*
J. C. NAGLE*
F. W. SIMONDS
T. U. TAYLOR
R. A. THOMPSON
W. VON STAFFRUWITZ*

*DECEASED

FIGURE 11. Invitation to Founders' Dinner at The University of Texas, 5 June 1931, by The Texas Academy of Science.

and 191 members were listed, and five papers were published in Volume XV, along with memorials to Everhart and Udden, who had died in 1932. Strecker also died in 1932, after serving his year as President. Thus, the Academy lost three of its most active Fellows in its first three years.

By the end of 1932 there were 89 Fellows, not counting the Life Fellows, and 249 members. At the Annual Meeting in Houston on 11, 12 November, with the President of the University of Texas, Dr. Benedict, presiding as President of The Texas Academy of Science, the Academy came into its own. Fifty-four papers were presented, with Benedict's Presidential Address on the new McDonald Observatory to be erected in the Davis Mountains as the star. The sessions were organized as to Biology, Physical Sciences, Geological Sciences, and Social Sciences. The Academy had five Library subscribers. For the first time the Academy announced itself as a member of the American Association for the Advancement of Science with a representative to the Association doings. There were 11 "Affiliated and Subordinate Bodies" including chapters at Commerce and San Antonio, and a Junior Academy at Commerce.

In 1932 or 1933, there began a gathering of scientific intellectuals into the city of Houston, allied with the blossoming Rice Institute, and the young prospering oil and gas companies and entrepreneurs in geology and geophysics. On the lists of new members of the Academy appeared the names of Donald Clinton Barton, Ludwig Wilhelm Blau, Elias A. Sellards, B. O. Winkler, J. Brian Eby, C. W. Heaps, W. Armstrong Price, L. W. Storm, and Gil Morgan. Price, Blau, and Eby would become Presidents of the Academy.

By 1934, the Academy began holding regional spring meetings, with the current officers attending and participating. By the time of the Annual Meeting in Austin there were 14 affiliated societies, two local chapters, and five junior academies (high school clubs). Forty-seven papers were presented and Abstracts were printed in the Transactions. About 450 paid members were listed. The first Annual Spring Meeting (Regional) was held in Brownwood.

Through the years 1935 to 1940, the affiliates increased to 20, three local chapters, and 12 junior academies. Ten regional meetings were held throughout the state, all two-day affairs, some of them with as many as 50 papers presented. Two-hundred attended the Annual Meeting in 1938; there were 492 members. One-hundred papers were presented. The meeting adjourned with a $500.00 balance. The Academy officially named a Senior Division, a Collegiate Division, and a Junior Division. During the five years the new science of "chemurgy" (industrial chemistry) bloomed and several papers were presented at the meetings. This was of course due to refineries being established along the Texas Coast. All of the meetings. including the spring regional meetings, received a maximum of publicity from the local newspapers, with pictures of the main officers and speakers, and exciting exclamations in print about the new sciences.

By 1941, when the Academy met with the American Association for the Advancement of Science in Dallas in December, it had reached its zenith of rapid growth. It was organized into five Sections: Physical Sciences, Biological Sciences, Social Sciences, Geological Sciences, and Conservation. There were to be three branches: South, West, and East. The Senior Academy, the

Collegiate Division, and the Junior Division, were to remain. There were 14 collegiate chapters, 32 junior chapters, and 697 paid members. The Junior Division printed its first Bulletin of Information, describing its functions. One-hundred seventy-one papers were presented at the Dallas meeting. The Treasurer reported the Academy entirely out of debt. At the Business Meeting it was voted to combine the Transactions and Proceedings into one publication per year and to issue a membership list every third year.

In 1940, an Academy handbook was distributed among all officers and committee chairmen. It was the result of three years of work by the new Constitution and Judiciary committees appointed in 1937, consisting mainly of past presidents. It was a collection of rules and regulations formed since the beginning of the 1929 Academy. First was a copy of the Letters of Incorporation, the 1929 Constitution, with various amendments adopted the past 10 years, and resolutions passed by the officers. Among the changes were: raising of the annual dues from $1.00 to $2.00, defining the functions of the Collegiate Academy and the Junior Academy, adding an elected Editor of publications, and an appointed American Association for the Advancement of Science representative to the Executive Council, the establishment of the Constitution and Judiciary boards, and the addition of six more permanent committees (T XXIII PtII:1-32).

Also contained in the handbook were descriptions of the agreements of the Academy with affiliated societies, including the AAAS, and with the Library Committee of Texas A&M College. This agreement certified the Texas A&M Library as permanent custodian and manager of the Academy Library, consisting at the time of 2200 publications, unbound. This agreement did not include exchanges of publications of the Academy with other publications (at the time it had arrangements with 64 such publications).

In the handbook the following 16 societies, together with the AAAS, were listed as affiliates:

Central Texas Section, American Chemical Society
Dallas Astronomical Society
Dallas Nature Study Club
Dallas Ornithological Society
El Paso Archaeological Society
Houston Museum and Scientific Society
North Texas Biological Society
San Antonio Science Club
Texas Archeological and Paleontological Society
Texas Association of Science Teachers
Texas Entomological Society
The Texas Folk-Lore Society
Texas Nature Federation
University Science Club
The Texas Society of College Teachers of Education
West Texas Historical and Scientific Society

Beginning in 1941, the group of aforementioned Houston professional scientists, together with Paul Weaver, geophysicist, assumed an active interest in and obligation to the Academy. Thanks to the leadership of Ludwig Wilhelm Blau, they were instrumental in getting 12 geophysical companies to contribute to a Publications Fund for 1942, 1943, and 1944. Otherwise the Academy could not have published Volumes XXVI and XXVII of the Transactions and Proceedings. For Volume XXVIII, 1944, Blau requested permission from the Council to sell advertisement in the publication. Reluctantly, the Council gave permission. The professional scientists sold ads to 30 oil and gas and oil services companies. So grateful were the members and officers of the Academy, they dedicated the Proceedings and Transactions of The Texas Academy of Science 1945, volume XXIX, to Blau. There were no advertisments.

In this issue, published in 1946, was included a membership list of about 950 senior members, 195 collegiate members, and 44 members in the armed forces. Fifty-seven papers were presented to the 1945 Annual Meeting at Baylor University. The Treasurer reported a cash balance of $2,068.98 and a Permanent Fund balance of $431.86. The recommendation of a Special Committee on Financing was adopted and a Board of Development was formed, with 10 members, to be elected. There was a proposal for a full time executive officer and a suggestion that "Consideration should be given to the erection of a suitable building to house Academy activities."

Elected to the new Board of Development for the purpose of raising funds for an executive officer and possibly an Academy building were past president Willis R. Woolrich, University of Texas, as Chairman, with four non-academic members: Beauford Jester, Governor of Texas, Ludwig Blau, Humble Oil & Refining Company, E. D. DeGolyer, geologist, O. S. Petty, geophysicist, and the current president of the Academy, John G. Sinclair. At the December 1946 meeting in Dallas, Professor Woolrich made the following report:

"The Board of Development created during the last annual business session and subsequently appointed during the year has had one meeting in Austin as a part of the organization plan but has held no further sessions.

"In the original planning the Board was probably too optimistic about its ability to delegate definite assignments of activity to men of important positions. In waiting for results from these assignments a condition of dormance has developed which has brought no tangible results. Probably if the Board is to accomplish more of the results for which it was created, it will necessarily have to assume more individual responsibility within its own membership for the materialization of the goals it has adopted.

Respectfully submitted
W.R. Woolrich
Chairman. Dec. 12, 1946"

The report was accepted.

In his reference to "men of important positions" Professor Woolrich was referring to Governor Jester, Blau, DeGolyer, and Petty. From the beginning in 1880, those working for the academies had expressed the hope of official recognition by the state government, usually through assigning elected state officials to fund-gathering boards or committees. At no time through the years had the state financed the academies. In electing Blau, DeGolyer, and Petty to the new Board in 1946, the members did not realize that those three had already exhausted their own resources and influential sources by financing volumes XXVI and XXVIII, and by selling advertising to various oil related businesses. Professor Woolrich's suggestion that funds would have to come from individual members of the Academy instead of so-called "men of important positions" only, has been followed more by default than by plan. Except for grants from the AAAS and National Science Foundation, most of the financial support had come from active members of the Academy. Blau, DeGolyer, and Petty were active members of the Academy. Through the years the Board of Development has been as inept in securing outside endowment as it was in 1946.

In 1948, the Academy published the last of the Proceedings and Transactions, volume XXX, in Houston. Labelled 1946, the 253 pages include a memorial to Frederick Byron Plummer, 1946 President, who died in February 1947. He was one of the group of geologists and geophysicists who kept the Academy going in the period 1942 through the nineteen fifties. He, Blau, President in 1948, and Eby, President in 1949, also were serving on the Publications Committee. It was they who decided to eliminate publication of the annual Proceedings and Transactions and create a quarterly journal. Volume XXX of the Proceedings and Transactions contained the last complete reports from the various officers, committees, and Collegiate and Junior academies.

In 1945, the Collegiate Academy adopted plans for a monthly mimeographed publication and distributed the first issue of TASCA, Texas Academy of Science Collegiate Academy, in 1946 to participating clubs. It contained news of activities of members, papers by some of them, and some papers by Junior Academy members. TASCA became the official organ of the Collegiate Academy, devoted to the promotion of scientific interest among undergraduate students. Members presented selected papers at the Annual Meeting of the Academy and were encouraged to prepare them for publication in TASCA. Through the years Senior Academy members served as counselors, directed the activities of the Collegiate Academy, and kept TASCA publishing continuously.

The Junior Academy was established by Professor Reed in 1934, for the purpose of the formation of science clubs in the high schools of Texas. The Academy sponsored science fairs among the clubs under the guidance of Senior Academy members. Through the years Junior Academy members

have participated in research funds supplied by the AAAS, which sponsored the promotion of high school clubs by its state academy affiliates. In 1942, the Junior Academy published a mimeographed bulletin, Texsciana, describing its purpose and function, and which became its official publication.

From the late 1930s through the 1950s the branches and the Junior and Collegiate academies held local and regional meetings, usually attended by one of the current officers of the Academy. Sometimes these meetings and programs were listed in the Journal. In April 1951, the Academy held a Regional Meeting in El Paso, where 72 papers were presented; a field trip to the White Sands Proving Ground, New Mexico, was well attended. A regional meeting for the South Texas Area was held in Kingsville, with the Texas College of Arts and Industries as host, in March 1953. TAS President Calvin reported good attendance by Senior Academy members and the Collegiate and Junior members.

In 1945, the Academy published in the Proceedings and Transactions of 1944, Volume XXVIII, a new and revised Constitution and By-Laws defining the roles of the branches, the Junior and Collegiate academies, the affiliates, and the changes made during the 15 years since the 1929 Constitution was adopted. Until the radical changes of the present 1986 Constitution were adopted, the following 1944 Constitution served as guide for the Academy, with small changes adopted in 1961 and 1976.

CONSTITUTION OF THE TEXAS ACADEMY OF SCIENCE, 1944

Article I.—Name

The name of this organization shall be "THE TEXAS ACADEMY OF SCIENCE."

Article II.—Purpose

The purpose of this Academy shall be to stimulate scientific research, to promote fraternal relationship among, and the general welfare of, those engaged in scientific work, especially in Texas; to diffuse among the citizens of the state a knowledge of the various departments of science; to investigate and report on any subject of science, or industry, when called upon by any department of the State government; and to publish reports of investigations and discussions conducted by Academy members.

Article III.—Membership

Section 1. Classifications: The membership shall consist of regular members, life members, fellows, patrons, honorary life fellows, and honorary members.

a. Regular Members. Any person engaged in scientific work or in the promotion of science is eligible for membership. Such members may be elected at any regular meeting of the Academy upon the recommendation of two members in good standing and upon the payment of the annual dues. Regular members may be enrolled between annual meetings by the Executive Council subject to confirmation by the Academy at the next regular meeting.

b. Life Members. A regular member who contributes $50.00 in one sum to the funds of the Academy automatically becomes a life member and is exempt from further dues.

c. Fellows. A member of the Academy in good standing who is engaged in scientific research or in the administration of scientific work may, by the Executive Council, be nominated a fellow on the following conditions: (1) he must have held membership in the Academy at least one year prior to his election, (2) he must present to the Academy for permanent file a copy of a publication of merit of which he is the author, (3) he must receive a two-thirds majority of the votes cast by the members present at an annual meeting. Any fellow of the American Association for the Advancement of Science who is elected to membership in THE TEXAS ACADEMY OF SCIENCE shall automatically become a fellow of the Academy.

d. Patrons. A person who shall contribute $500.00 in one sum to the funds of this Academy may be elected a patron. Election to "patron" shall carry with it the privileges of life membership and the exemption from dues.

e. Honorary Life Fellows. Any scientist resident in Texas who has rendered the Academy distinguished service of a scientific or administrative nature may be elected by the Executive Countil an "Honorary Life Fellow." This honor shall entitle the recipient to all fellowship privileges and exemption from dues.

f. Honorary Members. Anyone who has rendered distinguished service to the Academy or to science may be elected an honorary member. This honor shall carry with it all the privileges of the Academy except those of voting and of holding office.

Article IV.—Sections

Section 1. The Academy shall be divided into sections according to the major interest of its members.

Section 2. Members and fellows shall designate the section to which they belong.

Article V.—Intra-Organizations

Section 1. a. Regional Branches. The Executive Council may establish regional branches on the petition of the majority of the members of the Academy in good standing residing in the territory within which the branch is desired.

b. Organization of Regional Branches. Regional branches shall choose their own form of government and their own officers, provided their laws are in harmony with the Constitution and By-laws of the Academy.

c. Territorial Boundaries. The territorial boundaries of each Regional Branch shall be subject to the approval of the Executive Council. The Regional Branches are declared duly established when the Executive Council has approved the petition for a Regional Branch.

Article VI.—Junior Academy

Section 1. Junior Texas Academy of Science. THE TEXAS ACADEMY OF SCIENCE shall promote the organization and operation of science clubs in connection with accredited public and private schools of the State of Texas. These clubs when duly affiliated shall together constitute and be known as the Junior Texas Academy of Science.

Article VII.—Collegiate Division

Section 1. Collegiate Division. THE TEXAS ACADEMY OF SCIENCE shall promote the organization and operation of science organizations in the colleges and universities of the State of Texas. These organizations when duly affiliated shall together constitute and be known as the Collegiate Division of The Texas Academy of Science.

Article VIII.—Affiliated Organizations

Section 1. Any scientific organization in Texas may become an affiliated organization of this Academy upon the approval of the Executive Council.

Article IX.—Executives

Section 1. Officers. The officers of this Academy shall be a President, an Executive Vice-President, a Vice-President for each section, a Secretary, a Treasurer, an Editor, a Representative to the American Association for the Advancement of Science, and three Directors. These officers shall perform the duties usually devolving upon such officers and as provided for in the By-laws. Only fellows are eligible for election to these offices.

Section 2. Election of Officers. Method of Election of Officers and Members of the Board of Directors: Two months prior to the annual meeting the secretary shall mail to each member of the Academy in good standing a ballot compiled by the Elections Committee for the election of eligible members to fill all vacancies subject to election by the Academy members at large. This ballot shall carry two nominees for each office to appear alphabetically for each office except that in the case the Executive Vice-President consents to accept nomination for the presidency his name shall be first in his group. The Elections Committee shall place no name on the ballot until the candidate's consent to serve, if elected, shall have been received in writing by the committee chairman and his standing shall have been vouched for by the Treasurer. Blank spaces shall be provided on the ballot for writing in of names other than those printed on the ballot.

Each member voting shall mark his ballot, inclose it in an inner envelope (provided with the ballot), place his name on the outside thereof, enclose the whole in an outer envelope, and mail to the Treasurer not later than three weeks prior to the annual meeting. The Treasurer shall O.K. those envelopes received from members whose dues are paid for the current year and deliver the unopened inner envelopes to the Elections Committee which shall open and count the ballots and announce the results of the election at the opening business session of the Academy. The officers thus elected shall assume their duties at the close of the fiscal business session of the Academy.

Section 3. Terms of Office. All officers, with the exception of the Secretary, the Treasurer, the Editor, the Representative to the AAAS and the three elected members of the Board of Directors, shall hold office for one year, or until their successors have been elected and are duly qualified. The Secretary, and the Editor shall be elected on odd-numbered years for a period of two Academy years and the Treasurer and Representative to the AAAS shall be elected for two years on even-numbered years and shall hold office until their successors have been elected and are duly qualified. The three members elected to the Board of Directors shall serve for three years with terms of office over-lapping; one member shall be elected each year.

Section 4. Executive Council. a. The Executive Council shall consist of the President, the Vice-Presidents, the Secretary, the Treasurer, the Editor, the Representative to the AAAS, the Chairman of the Collegiate Division Committee, the Chairman of the Junior Academy Committee, and the immediate Past President. Four members of the Council shall constitute a quorum for the transaction of business provided that a sufficient notice is sent to all members of the Council in advance of the meeting. The Presidents of the Regional Branches shall be associate members of the Executive Council with all privileges except that of voting.

b. Duties of the Executive Council. The duties of the Executive Council shall be those provided for in the By-laws.

Section 5. Board of Directors. a. The Board of Directors shall consist of the President, the Secretary, the Treasurer, the immediate past president, and three "fellow" members in good standing. The President, Secretary, Treasurer, and immediate Past President shall serve as ex-officio members. The fellows shall be elected, one each year, to serve for a term of three years.

b. Duties of the Board of Directors. The Board of Directors shall

(1) have authority to represent and act for and on behalf of THE TEXAS ACADEMY OF SCIENCE in all legal transactions.

(2) review all proposed amendments to the Constitution and shall submit a written report of its recommendations thereon.

(3) serve as Court of Judgment on any question of the interpretation of the Constitution, or the constitutionality of any act committed by the Academy or its agents.

(4) invest the Permanent Funds of the Academy and shall make an annual report of the status of this Fund.

(5) make an annual report of its actions to the Academy and submit a copy of the minutes of each meeting for file with the Secretary of the Academy.

c. The new Board of Directors, at the close of each annual meeting, shall convene and organize at the call of the incoming President.

d. Four members of the Board shall constitute a quorum. The Chairman shall have full voting privileges irrespective of the division of the Board.

Article X.—Committees

Section 1. a. Standing Committees. The standing committees shall be as follows: (1) Program, (2) Publications, (3) Elections, (4) Affiliations, (5) Junior Academy, (6) Library, (7) Membership, (8) Research Grants, (9) Collegiate Division.

b. The President shall be authorized to appoint, subject to the confirmation of the Executive Council, all members of the standing committees, except those otherwise provided for.

Section 2. Special Committees. The President shall be authorized to appoint such special committees as the welfare of the Academy may require.

Article XI.—Amendments

Section 1. Amendments. This Constitution may be amended at the final business session of any annual meeting of the Academy by a three-fourths majority of the attending members of at least one year's standing; provided, that the proposed amendment is accompanied by a written opinion (either for or against) of the Board of Directors, and provided further that the proposed amendment be read to the membership at least one day previous to balloting.

BY-LAWS OF THE ACADEMY

Article I.—Duties of Officers

Section 1. The President, in addition to being the chief executive officer of the Academy, shall serve as chairman of the Executive Council. He shall convene the incoming Board of Directors at the close of each annual meeting and shall serve as a member thereof. He shall fill all vacancies in elective positions subject to the approval of the Executive Council. He shall be an ex-officio member of all committees.

Section 2. The Executive Vice-President shall serve as vice-chairman of the Executive Council. He shall serve as general chairman of the Program Committee. He shall perform such other duties as the President and Executive Council may designate. In case of the death or resignation of the President he shall succeed to that office.

Section 3. The sectional Vice-Presidents shall serve as program chairmen of their respective sections and as members of the Executive Council. They shall have the authority to appoint (with the approval of the President) sub-chairmen and clerks of their sections.

Section 4. The Secretary shall, in addition to the usual duties of that office, be a member of the Executive Council and serve as ex-officio secretary of the Executive Council. He shall serve as a member of the Junior Academy Committee and of the Membership Committee. He shall

issue charters to chapters of the Junior Academy and certificates of Membership and Fellowship. At each regular meeting of the Academy, he shall submit a report on the activities and the status of the Academy.

SECTION 5. The Treasurer shall be the custodian of all funds of the Academy. He shall have his accounts audited by a Certified Public Accountant and shall present the audited report to the Academy at its annual meeting. He shall prepare a budget of estimated income and expenditures and present the same to the Executive Council for approval within thirty days after the last annual meeting of the Academy. He shall disburse the Current Funds on order of the Executive Council and invest the Permanent Fund on order of the Board of Directors. He shall serve as a member of the Executive Council and of the Board of Directors.

SECTION 6. The Editor shall serve as chairman of the Publications Committee and shall have charge of the editing and publishing of all Transactions and Proceedings of the Academy and of all other publications not otherwise provided for.

SECTION 7. The Representative to the Council of the AAAS shall represent and promote the Academy's interests in that organization and make a report of the activities of the AAAS Council.

ARTICLE II.—DUTIES OF EXECUTIVE COUNCIL

SECTION 1. The duties of the Executive Council shall be as follows:

(1) Nominate regular members to the rank of fellows.
(2) Elect Honorary Life Fellows.
(3) Create new sections of the Academy or re-divide the present ones when the best interest of the Academy warrants such action.
(4) Pass on the applications for the organization of Regional Branches and determine the geographic boundaries of such Branches.
(5) Pass on the budget prepared by the Treasurer and authorize the disbursement of the Current Fund.
(6) Pass on the applications of Affiliated Organizations.
(7) Authorize the collection of registration fees in connection with annual meetings.
(8) Approve appointments to vacancies that may arise between annual meetings, unless otherwise provided for.
(9) Determine the time and place of annual meetings.
(10) Approve time and place of Branch meetings.
(11) Authorize special meetings of the Academy.
(12) Enroll new members between annual meetings subject to confirmation by the Academy.
(13) Confirm standing committee members nominated by the President.
(14) Elect the members to the Junior Texas Academy of Science Committee, one each year.
(15) Elect the members to the Collegiate Division Committee.
(16) Review and approve requirements of membership to the Junior Academy and grant charters to chapters.
(17) Make an annual report of the status of the Current Fund.
(18) Transact such other business as may arise which has not been provided for.

ARTICLE III.—FINANCE

SECTION 1. Funds. The funds of the Academy shall be divided into (a) Permanent Fund and (b) Current Funds. The Permanent Fund shall consist of all moneys paid by Patrons and Life Members upon election and all gifts and legacies. All gifts and legacies together with interest thereon shall be used only for the purposes specified by the donors. The Current Funds shall be made up of all other income including interest from the Permanent Fund unless otherwise provided for.

SECTION 2. Dues. The annual dues for regular members shall be $2.00, except that the dues for students in college shall be $1.00.

SECTION 3. Members whose annual dues are in arrears more than one year shall be dropped automatically, after due notice, and may be reinstated only by a majority vote of the Executive Council. Members in the Armed Forces shall be regarded in good standing without payment of dues until six months after discharge from the service.

SECTION 4. Members of the Junior Texas Academy of Science shall pay dues in accordance with the provisions of the Junior Texas Academy Committee. After graduation from high school such members automatically become active members in the Academy without the payment of any dues for the remainder of the academic year during which graduation occurs.

ARTICLE IV.—SECTIONS

SECTION 1. The present division into sections shall be:

Sec. I. Astronomy, Chemistry, Engineering, Mathematics, Physics.

Sec. II. Agriculture, Botanical Sciences, Medical Sciences, Zoological Sciences.

Sec. III. Anthropology, Education, Historical and Philological Sciences, Psychology, Social and Economic Sciences.

Sec. IV. Geography and Geological Sciences.

Sec. V. Conservation.

SECTION 2. The Executive Council shall be authorized to make additions to, or re-divisions of, the sections when the need arises. Permanent changes in sections shall be made only by amendment to the By-laws.

ARTICLE V.—MEETINGS

SECTION 1. Meetings of the Academy shall be of two classes:

a. Regular meetings and b. Special meetings. Regular meetings shall be of two types: (1) Annual meetings and (2) Branch meetings.

SECTION 2. The time and place of annual meetings shall be determined by the Executive Council within ninety days after the preceding annual meeting.

SECTION 3. Branch meetings may be held at convenient times and places on approval of the Executive Council.

SECTION 4. Special meetings of the Academy may be called by the Executive Council for the purposes (a) of participation in meetings of other organizations whose aims are consistent with those of the Academy, or (b) the presentation of a special program by the Academy, or (c) meetings in areas not included in Regional Branches.

ARTICLE VI.—THE JUNIOR TEXAS ACADEMY OF SCIENCE

SECTION 1. Aim. THE TEXAS ACADEMY OF SCIENCE shall promote the organization and operation of local science organizations in the accredited public and private schools of the State of Texas. These organizations shall, when duly chartered by The Texas Academy of Science, together constitute the Junior Texas Academy of Science.

SECTION 2. THE JUNIOR TEXAS ACADEMY OF SCIENCE shall be under the direction of the Junior Texas Academy Committee. This committee shall consist of seven members, the Secretary of the Academy serving as ex-officio member and six to be elected annually by the Executive Council of the Academy. This committee shall (a) appoint for each organized region a Regional Director of the Junior Academy activities and (b) formulate the requirements for membership in the Junior Academy subject to the approval of the Executive Council and (c) grant charters to Junior Academy chapters subject to review by the Executive Council.

SECTION 3. Any local science organization which meets the requirements shall upon the recommendation of the committee in charge receive from the Secretary of the Academy a char-

ter of membership in the Junior Texas Academy of Science. The charter shall be valid as long as the chapter meets the requirements.

SECTION 4. The officers of the Junior Texas Academy of Science shall be for each organized region: A Regional President, Regional Vice-President, and Regional Secretary-Treasurer. These officers shall be elected for one year at the regional meeting which shall be held in conjunction with the regional meetings of The Texas Academy of Science. The officers, together with the Regional Director, shall constitute the regional executive council of the Junior Texas Academy of Science.

SECTION 5. The Junior Academy Committee and the Junior Academy Council shall formulate and agree upon a program of work and the expenditures to be entailed.

SECTION 6. A report shall be made by the Junior Academy Committee at each annual meeting of the Academy on the progress and status of the work of the Junior Texas Academy of Science.

ARTICLE VII.—THE COLLEGIATE DIVISION OF THE TEXAS ACADEMY OF SCIENCE

SECTION 1. The Collegiate Division of THE TEXAS ACADEMY OF SCIENCE shall be under the direction of the Collegiate Division Committee. This Committee shall consist of four members, namely, the Councilor elected by the state organization of the Collegiate Division and three members of the Academy elected by the Executive Council, one to be elected each year and to serve for a period of three years.

SECTION 2. This Committee shall be charged with the duty of supervising and promoting the work of the Collegiate Division and shall make a report at each annual meeting of the Academy on the progress and status of the Division.

SECTION 3. The Councilor shall be a fellow of the Academy and shall be an ex-officio member of the Executive Council of the Academy.

ARTICLE VIII.—PROCEDURE AT ANNUAL MEETINGS

SECTION 1. The order of procedure at Annual Meetings shall be as follows:

(1) Opening business session

(2) Program sessions

(3) Final business session

SECTION 2. The order of procedure shall be based on Robert's Rules of Order unless otherwise decided by a majority of the members present and voting.

ARTICLE IX.—QUORUM

SECTION 1. The members in good standing, present at any business session or annual meeting, shall constitute a quorum for the transaction of business.

ARTICLE X.—AMENDMENT

SECTION 1. These By-laws may be amended by a majority vote of those present at the final business session of the annual meeting, provided the proposed amendment has been presented, read, and laid on the table at a previous business session.

In 1946, the Academy conceived of a Conservation Council, which was inaugerated in 1947 with the stated purpose of encouraging research in the fields of conservation, education, and becoming the core of a dynamic academy of science. One councilor was appointed for each of the specialties,

such as human health, economics, water conservation, soil conservation, metals, state parks, and so forth, with each councilor appointing assistants if he so desired. There were 23 specialties listed in the 1949 program of the meeting at Rice Institute. In the last issue of Proceedings and Transactions, Volume XXX, President Sinclair wrote the following foreword dated September 1947:

"The Academy is entering its second half century. The semicentennial program containing some ninety contributions from the senior academy and twenty-seven more from the collegiate and junior academies indicates the degree of growth and maturity. This year the Academy is planning the consummation of an idea which has been in the mind of its older members for many years. It will establish a central headquarters for its far flung offices and activities. It will centralize the work of secretary and treasurer as well as editor in one person. The library will be merged with the University (Austin) library and student privileges will be granted to Academy members. The Academy will assume a more important part in the life of the State of Texas by setting up a Council on Conservation covering all the important fields of study...."

The Academy published four monographs on conservation by The Texas Academy of Science Conservation Council from 1947 through 1949. By 1952, 31 specialties were listed by the Council. The articles on conservation had been integrated with the new Texas Journal of Science.

On 31 March 1949, The Texas Academy of Science published Volume I no. 1 of *The Texas Journal of Science* with the following ANNOUNCEMENT on page i:

"To All Members of The Texas Academy of Science

With this issue of the new Texas Journal of Science the old Proceedings and Transactions of the Texas Academy of Science is no more ....It was decided to go from the old Proceedings and Transactions, which appeared irregularly, to the present Journal which will be published quarterly and which will be open, not only to members of The Texas Academy of Science but to any scientist whose paper meets with the approval of the Publications Committee, the publication of which will not interfere with, nor exclude, papers prepared by Academy members."

The Publication Committee consisted of President Eby, past-Presidents Blau and Sinclair, and Editor J. L. Baughman, Chief Marine Biologist of Rockport, Texas. The issue was printed at San Marcos, Texas.

The new Journal seems to have been modeled after *The American Journal of Science*, the first scientific journal in the United States devoted to the geological and related fields, published by the Kline Geology Laboratory of Yale University, established in 1818 by Benjamin Silliman, one of the fathers of American geology. This shows the influence of Blau and Eby, who were keeping the Academy going through advertisements from their colleagues in the oil business in the new Journal, along with a page of Profes-

sional Directory. The geophysicists printed the Annual Meeting Programs for 1948, 1949, and 1950. By the December 1949 meeting, the dues had been raised to $5.00, a part of them going to the Journal. The intention was to include the Proceedings and Transactions of the Academy in the new Journal. The first two volumes had the front cover, inside front cover, and inside back cover listing contents, officers, boards, and the Conservation Council and Councilors, and the notice "Containing The Proceedings and Transactions of The Texas Academy of Science." Beginning with Volume III, 1951, the Publications Committee dropped the Proceedings and Transactions notice on the cover.

By 1953, the Journal had an Editor, J. L. Baughman, two Associate Editors, and an Editorial Board of six members, including Blau and Eby, who continued to finance the Journal through advertising from their colleagues. They hired an Advertising Manager in 1951 and renamed him Advertising Director in 1953. Through 1957, there were an average of 10 advertisements and 19 listings in the Professional Directory. After 1958, there were no more advertisement. The 10 listings in the Professional Directory lasted through 1960, the Advertising Director was no longer listed. Blau and Eby went off the Editorial Board and joined the Board of Development.

Due to the new publication, the annual budget of the Academy went from about $2400 in 1947 to $10,000 in 1952. The dues were allocated in the ratio of $2.00 for the office of the Secretary-Treasurer and special projects to $3.00 for the Journal. The Journal absorbed 60 percent of the annual income. By 1959 the Academy was operating with a net deficit of $1,647.44. The Annual Meetings were supposed to finance themselves.

In the meantime, during the 1950s the Academy received funds from C. M. and Mary Glide Goethe, out-of-state members from Sacramento, California, to pay the dues of "...worthy young people who were either just entering upon careers in science or who for other reasons needed a boost toward scientific goals...." The Academy also received grants from the National Science Foundation for special projects, one of them to the newly formed Board of Science Education for educational projects. This was a visiting scientist program where Academy members gave lectures to, and consulted with, high school students who might be interested in becoming scientists. In 1954 the Board of Development sponsored a program on Public Television called "Science at Work." The Board of Science Education made a study of the teacher education programs in the state, mailing questionaires and analyzing the responses, with the goal of recommendations from the Academy to the Science Curriculum Committee of the State Board of Education. The Board of Science Education also prepared research proposals regarding science education for submission to the National Science Foundation. At the 1958 Annual Meeting, the following affiliated societies held meetings with the Academy: The American Association of Physics Teachers, Texas Section, Mathematics Association of America, Texas Section, and the Texas Psycho-

logical Association. At this meeting, the Treasurer reported a $4,392.79 balance in the Permanent Fund, a $380 balance in the Goethe Fund, and $900 research grants from the AAAS. He also reported the net deficit of the general operating funds of $1,647.44, which by 1961 had grown to $2,647.67. To offset this, at the 1961 meeting in Galveston the dues were raised to $7.00 and a revision of the Constitution was adopted. The Junior Division and the Collegiate Division were renamed The Junior Academy and The Collegiate Academy. A Mathematics Section was added bringing the total number of sections to six, each with a Vice-President appointed by the President. The office of elected Vice-President was created, to become President-Elect the next year and President the next, thus creating a continuous service to the Academy for four years. The Editor of the Journal was to be elected for at least two years. By 1962, there were 920 members and 215 papers were presented at the Annual Meeting in Austin. With the 1960 volume, the Journal ceased carrying advertisements, and no longer listed an Advertising Director or a Professional Directory.

In 1963, Robert E. Boyer, Editor of the Journal, initiated The Texas Academy of Science Newsletter, a letter size quarterly as "An attempt to inform the Academy membership of pertinent events of the Academy, its affiliated societies and individual members, as well as other scientific activities in Texas." In Volume I, number 1, February 1963, the following letter was printed so that the membership could be made aware of the Academy's standing with the National Academy of Sciences:

December 13, 1962

Dr. Donald Duncan
President, Texas Academy of Science
University of Texas Medical School
Galveston, Texas
Dear Dr. Duncan:

It gives me great pleasure to transmit to you the following resolution that was unanimously adopted by the National Academy of Sciences in Business Session on November 30:

RESOLVED: That the gratitude of the members of the National Academy of Sciences assembled at Austin for the ninety-seventh Autumn Meeting of the Academy be conveyed to the Chancellor, the President, and the Vice-President of the University of Texas, to the President of the Texas Academy of Science, and to the local Committee on Arrangements for the excellent facilities provided, for the warm hospitality extended, and for the high quality of the program that made the occasion one of unusual enjoyment and scientific profit for all those who took part.

We were especially grateful to you and the other officers of the Texas Academy of Science for the effective part that you played in arranging a meeting that was memorable for us, and for your generous hospitality in making our members your guests at dinner on Friday evening. The opportunity of cooperation between our academies set a standard for the future that we shall be hard pressed to match in other sections of the country.

With warm appreciation. I am.

Yours Sincerely,
Hugh L. Dryden
Home Secretary

The Newsletter lasted through 1974, with the following Editors:

1963-1964	Volume I-II	Robert E. Boyer
1965-1966	Volume III-IV	Paul Westmeyer
1967	Volume V	David P. Butts
1968-1969	Volume VI-VII	Albert Casey
1970	Volume VIII	Jeanette L. Gillette
1971-1974	Volumes IX-XII	Billie Slaughter

It carried the program of the next Annual Meeting, a picture and an article about the Banquet speaker, any special news about Academy scientists, specific news about the various research grants, and also news of the Texas universities and colleges.

By 1968, the Academy was running a deficit again. At the 1969 Annual Meeting, dues were raised to $9.00 and a Science Education Section was added. During this year President Norris and Immediate Past President Robert E. Boyer met with Texas Governor Preston Smith with an offer of TAS scientists expertise in solving problems and planning programs for Texas. There is no record that Governor Smith ever called upon TAS scientists as experts to serve the state in an official manner. The Conservation Committee passed a resolution to control the size of the Texas human population before the Texas resources were exhausted. In an attempt to execute this resolution, the Committee joined efforts with Planned Parenthood Association.

From 1965 through 1986, the affiliated societies remained the same four listed. In 1987, the Texas Society of Mammalogists became an affiliate of the Academy.

Having survived for 40 years, twice as long as the foregoing 1892 Academy, the 1929 Academy, together with its predecessors, by 1970 had become a legacy of the mathematics and science professors of Texas universities and colleges. There was a deep-felt responsibility on their part to sustain and nourish this institution dedicated to the stimulation of scientific learning and research among themselves and their students. To serve as officers and on committees, however, was not only an honor but an obligation.

There were 635 registrants at the Texas A&M Annual Meeting, 1976, with 425 papers presented. More than 40 percent of these were biology. In fact, from the beginning biology was predominant in the meetings and the publications. Through the 1980s this percentage increased to more than 60 percent. However, the preponderance of biology has been a mirror of the national emphasis. In fact, a statistical study of the papers presented at meetings and published in *The Texas Journal of Science* would show that the Academy is indeed an umbrella for all the sciences.

In 1976, Dr. James D. Long, Past President, 1971, along with Dr. Everett D. Wilson, Secretary-Treasurer, both of Sam Houston State University, distributed Volume I, number 1, of a new TAS Newsletter, to be a quarterly,

and they hoped revive the Newsletter that expired in 1974. This publication lasted through Volume VIII, 1983.

By 1977, in spite of an increase in dues to $12.00, page charges of $35.00, and 292 library subscriptions to *The Texas Journal of Science* at $45.00 per year, the Academy was in debt to the University of Texas (Austin) Press for an $8000 printing bill and had put its Permanent Fund of $6000 in hock. Most of this debt was due to publication of *The Texas Journal of Science.* During 1976, the Board of Directors met monthly to budget the Academy's expenditures and try to devise ways to pay the debts. In the meantime, letters were sent to the membership explaining the debt and the probability that the Academy would have to discontinue publication of the Journal, which had been published continuously since 1949. The response of the membership was indicative of their esteem for the Academy. About $16,000 was contributed enabling the Academy to pay the printing bill, get the Permanent Fund out of hock and pay current bills, with a small surplus left over.

Throughout its existence and that of its predecessors, the Academy had no formal bookkeeping or recordkeeping, and no formal fiscal reporting to the membership at large, For this Academy, there had been no Transactions or Proceedings reports since 1948. The Academy files were kept with the current Secretary-Treasurer, and the Journal files with the current Editor. There was little money for paid staff, certainly no money for a paid Executive Director or a permanent office. Most of the labor was labor of love by already over-scheduled teachers, who paid their own expenses whenever they could, and the universities and colleges, which extended as much free hospitality and financial assistance to officers as possible within their own stretched budgets. Throughout my study of the Texas Academies of Science, it has been amazing that there has been no forthcoming financial help or official recognition of these institutions by the Texas Legislature or officials in the State Government, especially in the Department of Education.

Relieved of the burden of debt, officers of the Academy during 1978 and 1979 looked forward to increased membership, establishment of an Endowment Fund, and regional TAS activities. A mild change in the Constitution in 1976 established the Texas Academy of Science Foundation for the purpose of developing and enlarging the Permanent Fund. External annual audits were planned to make sure there would be no deficit crises such as the one just experienced. The Academy report to the National Association of Academies of Science for the Directory and Handbook of 1979-80 reflected the maturity of the institution and the pride of the current officers in having weathered a threat to its very existence.

Officers: President, President-elect, Vice-president, Secretary, Treasurer, Director of the Junior Academy, Director of the Collegiate Academy, Editors, and Delegate to the National Association of Academies of Science.

Activities: membership, 1436, sections, 11, including the recently added Computer Sciences, Aquatic Sciences, and Forensic Sciences. Junior Academy, including Science Fairs and AAAS research grants. Collegiate Academy, with its publication of the quarterly newsletter TASCA, its presentation of research papers at the Annual Meetings. Meetings: Annual Meetings in March for business affairs of the Academy and presentation of research papers by Senior Academy members, symposia, field trips, and recognition of outstanding members. Publications: *Texas Journal of Science*, Collegiate Academy quarterly newsletter (TASCA), and the *Texas Academy of Science Newsletter* (discontinued in 1983). The dues for 1979 were now $15.00.

In 1979, the Academy established the *Distinguished Texas Scientist Award* to be presented each year at the Annual Meeting to give recognition to those men and women of science who have and are excelling in their chosen disciplines. Provisions of the Award:

1. The award shall be to that scientist who, while a resident of Texas, had made a significant contribution to the advancement of scientific knowledge or understanding, or both.

2. Nominations may be made by anyone and must be received by the Secretary of the Academy on or before 31 October to be considered for presentation at the subsequent year's ceremony.

3. Each nomination must include: a) a complete description of the achievement for which the award is sought, b) a one-page summary of the nominee's qualifications which emphasizes the scientific, technical, scholarly, and/or practical significance of the nominee's research, c) a minimum of three supporting letters from individuals competent to judge the nominee's professional contributions, d) a recent photograph of the nominee suitable for publicity releases, e) the full mailing address and telephone number of the nominee. All submitted materials become the property of The Texas Academy of Science unless arrangements have been made for other disposition.

4. The recipient of the award shall appear at the annual meeting of the Texas Academy of Science to receive the award in an appropriate ceremony.

5. The recipient shall present a suitable lecture at the annual meeting at which the award is made. A manuscript based on this lecture shall be prepared for publication in *The Texas Journal of Science.*

THE TEXAS ACADEMY OF SCIENCE
DISTINGUISHED TEXAS SCIENTISTS, 1979-1988

1979. *Michael Ellis DeBakey*, M.D., M.S., LL.D., world famous heart surgeon, President of Baylor College of Medicine, Houston. He was honored on Friday, 9 March, at the banquet, during the Annual Meeting at The University of Texas-Arlington. He discussed the interactions involving basic science, engineering, and medicine in developing treatments of cardiovascular disease. He is a life member of the Academy.

1980. *Ilya Prigogine.* Ph.D. from the Free University of Brussels, in chemistry and physics, Nobel Laureate in chemistry, 1977. He is Professor of Chemistry at The University of Texas-Austin. He was honored on Friday afternoon, at the Chemistry Section meeting on 7 March, during the Annual Meeting at The Corpus Christi State University. His address was "Dissipative structures."

1981. There was no Distinguished Scientist selected in 1981.

1982. *Perry Lee Adkisson*, Ph.D. in entomology, Kansas State University, Deputy Chancellor for Agriculture, The Texas A&M University System. He was honored at the Plenary Session of the Annual Meeting on 3 March, at Angelo State University, San Angelo. His Plenary Address was titled "Science and the individual."

1983. *Michel T. Halbouty*, B.S. in petroleum engineering from Texas A&M University. Chairman and Chief Executive Officer, Halbouty Energy Company, Houston, Texas. Honored at the Plenary Session, Friday, 4 March, of the Annual Meeting, Stephen F. Austin State University, Nacogdoches. Title of address: "Geology's heritage and promise."

1984. *Francis S. Johnson*, Ph.D. in meteorology from the University of California at Los Angeles. A world-renowned aerospace scientist, Professor of Natural Science at The University of Texas at Dallas. Honored during the Plenary Session, the Annual Meeting at The University of Texas-San Antonio, 16 March. A member of the National Academy of Sciences. Title of address: "The earth's magnetosphere - a magnetohydrodynamical generator."

1985. *Albert Zlatkins*, Ph.D. in chemistry, Wayne State University, Professor of Chemistry, The University of Texas at Houston. Honored during Plenary Session of the Annual Meeting. The University of Texas at Dallas, 15 March. Title of address: "Recent developments in gas chromatographic trace analysis."

1986. *Grover Elmer Murray*, Ph.D. in geology from Louisiana State University. University Professor and Professor of Geosciences, Texas Tech University. Honored at the Plenary Session of the Annual Meeting, Texas A&I University, Kingsville, 7 March. Past President of the AAPG and recipient of the AAPG Sidney Powers Medal. Title of address: "Musings about some of the tectonics of the southwestern United States and northern Mexico."

1987. *Richard C. Starr*, Ph.D. from Vanderbilt in botany. Professor of Botany, The University of Texas at Austin. Honored at the Plenary Session, Annual Meeting, Sam Houston State University, Huntsville, 6 March.

1988. *Virgil Everett Barnes*, Ph.D. in geology from The University of Wisconsin. Professor Emeritus of the Department of Geological Sciences, The University of Texas at Austin, Senior research scientist in the Bureau of Economic Geology, Austin. Honored during the Plenary Session, Annual Meeting, 4 March, East Texas State University, Commerce. Title of his address: "The origin of tectites."

At the Annual Meeting of March 1980, in Corpus Christi, 500 persons were registered and 286 papers presented. The Conservation/Preservation Committee structure was expanded to include the preservation of ecosystems, endangered species, plant genetic resources, animal genetic resources, wildlife management, and predator control. Members of this committee were to gather information and submit reports to the President, and through him to the general public of Texas. This action reflected the upbeat attitude expressed by President Richardson in his Notes to the May 1980, issue of the Texas Academy of Science News: "The Texas Academy of Science is in the best condition that I can recall. I have an enviable position in which to take office....

"We now have an opportunity to begin developing services and meeting obligations for which the Academy is chartered. Till recently, survival some-

times has seemed to be a hopeless goal, but at last, we can see sunshine. We were far in debt, the membership roster was stagnating, and the TJS had problems. After several years, all three of these areas are under control, or well along the way. I am glad that we had some determined members who gave generously of their time and energy. Now, I hope the members will freely suggest new Academy functions, and we can better serve the needs of its members and the citizens of Texas."

However, in his Financial Report, published in the November issue of the 1980 TAS News, Dr. Everett D. Wilson, Secretary-Treasurer, inserted a cautious note:

"Funds anticipated for 1981 should be adequate to offer modest support of routine, on-going TAS activities. The Permanent Fund of the Academy continues to grow, passing the $10,000.00 mark for the first time in 1980. Cash reserves at the end of the 1980 year, however, will be quite small and may be depleted completely as we finance a new *Texas Journal of Science* publishing format. The progress made during the past few years from a time when indebtedness exceeded $20,000.00 to the present has been very impressive and is due to generous contributions of time and money by Academy members. If new Academy programs become desirable or if costs increase, additional revenues will be urgently needed."

Additional revenues were needed, the dues were increased to $20.00 and the Board of Development was reactivated. In its 1982 Report, several projects were suggested for raising money but to date (1987) no contributions have been reported. The publishing of the Journal was reorganized so that expenses were reduced. The Annual Meetings were holding their own and returning some surplus to the Academy. However, there was a decrease in Annual Meeting attendance and the number of papers presented. Membership remained fairly constant with no outstanding increase despite special efforts by the Membership Committee. At the 1985 Annual Meeting at The University of Texas at Dallas, there were 400 registrants but only 159 papers presented.

Two outside factors were affecting the Academy during the 1980s. The organization and stepped up aggression of regional sections of such national societies as the American Chemical Society, the Mathematical Association of America, the Society of Industrial and Applied Mathematics, the American Association of Petroleum Geologists, the Society of Exploration Geophysicists, and especially the Academy's favorite affiliate, the American Association for the Advancement of Science, an umbrella type like the Academy so well financed that there was no contest especially when the AAAS Southwestern and Rocky Mountain Division, having taken in Texas, scheduled its Annual Meeting in Wichita, Kansas, less than a month after the Annual Meeting of the Academy in Commerce, 3-5 March 1988. By this time, members of the Academy were having trouble getting travel expenses, many of them paying their own. What scientist, given the choice, would not opt

for a chance to present research results to colleagues from several states instead of one? The AAAS Meeting was held 29 March-2 April 1988.

The second factor affecting the Academy was the "oil bust" of the 1980s in Texas and the accompanying trickle down of lost revenue to the universities and colleges. In a letter to members from the President, Dr. Lamar Johanson has this to say: "With the likelihood of one or more special sessions of the legislature, funding for State supported universities looks uncertain for the next biennium. At best, I believe that almost everyone will agree that funds will be very tight, and undoubtedly travel to national and out-of-state meetings may be restricted in most cases.

"Assuming the above is the case and in order to continue your professional growth, let me urge you to plan to give a paper at the 1988 meeting of the Texas Academy of Science. . . ."

In spite of limited funds and the intrusion of national society sections, more than 200 members attended the 1988 meeting and 115 papers were presented. Academy sections were restructured and increased to 15: Freshwater and Marine Sciences, Bio-medical Science, Botany, Cellular and Molecular Biology, Chemistry, Computers in Science and Science Teaching, Conservation, Environmental Science, Geology, Mathematics, Physics, Science Education, Sociology, Systematics and Evolutionary Biology, and Terrestrial Ecology and Management.

So far the 1980s have produced three stabilizing changes in the Academy: The 15 Sections, an infusion of $20,000.00 by members in the Endowment Fund, and a radical revision of the Constitution.

CONSTITUTION OF THE TEXAS ACADEMY OF SCIENCE, 1986

Article I.—Name

The name of this organization shall be "The Texas Academy of Science, Inc.," hereinafter referred to as the "Academy."

Article II.—Purpose

The purpose of this Academy shall be strictly educational, within the meaning of Sec. 501(c)(3) of the Internal Revenue Code of 1954 (or the corresponding provisions of any subsequent United States Revenue Laws). The purpose of the Academy is to encourage excellence in science and in science teaching, to stimulate communication among scientists and between scientists and the citizens of the state, and to provide specialists that can be called upon when needed by the executive and legislative branches of state government or by state agencies. No part of the net earnings of the organization shall inure to the benefit of any private shareholder or individual. Nor shall the organization participate or intervene in (including the publishing or distributing of statements) any political campaign on behalf of any candidate for public office or be partisan in its approach to such political campaigns. In the event of liquidation or dissolution of the organization, whether voluntary or involuntary, no member shall be entitled to any distribution or division of its remaining property or its proceeds, and the balance of all money and other property received by the organization from any source, after the payment of all debts and obligations of the organization, shall be used or distributed exclusively for purposes within those

set forth in these Articles and within the meaning of Section 501(c) (3) of the Internal Revenue Code and its Regulations as the same now exist or as they may be hereafter amended from time to time.

Article III.—Membership

SECTION—1. Classifications.

The membership shall consist of Regular Members, Associate Members, Affiliate Members, Emeritus Members, Life Members, Fellows, Patrons, Corporate Members and Honorary Members. Dues for each class of membership shall be recommended by the Board of Directors and approved by a majority vote of members at the Annual Business Meeting of the Academy.

a. Regular Members.

Any person engaged in scientific work or in the promotion of science is eligible for membership upon payment of dues.

b. Associate Members.

Associate membership shall be open to any student enrolled in a graduate program at a recognized degree-granting institution. Eligibility for associate membership shall be the same as for regular membership except that the annual dues may be reduced.

c. Affiliate Members.

Members of affiliate organizations are eligible for affiliate membership. Affiliate Members may present papers at the Annual Meeting through one of the Sections of the Academy. They must meet all Section requirements for deadlines and abstracts. They must register at the Annual Meeting, but are not required to pay a paper presentation fee. Affiliate Members will receive Academy publications, except for *The Texas Journal of Science*. Affiliate Members may not vote in Academy elections or hold elective office. Dues for Affiliate Members may be reduced.

d. Emeritus Members.

Emeritus membership shall be open to retired members in good standing upon application to and approval by the Board of Directors. Emeritus membership shall be the same as regular membership except that annual dues may be reduced.

e. Life Members.

A Regular Member may become a Life Member upon payment of a sum twenty times the annual dues. Appropriate certificates shall be awarded to all Life Members of the Academy.

f. Fellows.

Any member of the Academy who has made a distinguished contribution to his or her field of science may be nominated by two Fellows of the Academy and after approval by a two-thirds vote of the Board of Directors shall be named a Fellow of The Texas Academy of Science. Any Fellow of the American Association for the Advancement of Science or member of the National Academy of Science or National Academy of Engineering who is, or becomes, a member of the Academy shall automatically become a Fellow.

g. Patrons.

A person who shall contribute, in one sum, a significant amount of funds to the Academy may be named a Patron by a two-thirds majority vote of the Board of Directors. A Patron shall have the privileges of Life Membership and be exempt from dues. Appropriate certificates shall be issued to Patrons of the Academy.

h. Corporate Member.

Any corporation engaged in scientific work or in the promotion of science is eligible for membership and may be named a Corporate Member by a two-thirds majority vote of the Board of Directors and upon payment of Corporate dues in the amount specified by the Board. These are considered to be non-voting memberships.

i. Honorary Member.

Honorary membership in the Academy may be bestowed upon recommendation of the Board of Directors and approval by majority vote at the Annual Business Meeting of The Academy.

Article IV.—Sections

SECTION 1. The Academy shall be divided into Sections according to the interests of the Academy members. Section organization and structure shall be specified in the By-laws.

SECTION 2. The officers of the Sections, under the chairmanship of the President-Elect, shall constitute the Program Council. The purpose of the Program Council shall be to review the function and operation of the Sections and of the Annual Meeting presentations, and to make recommendations to the Board through the President-Elect.

Article V.—Intra-Organizations

SECTION 1. The Texas Junior Academy of Science

a) Purpose.

The Texas Academy of Science shall promote the organization and operation of Science clubs or similar organizations in connection with accredited public and private high schools in the State of Texas, or other organizations approved by the Board of Directors. These organizations, when duly affiliated, shall together constitute and be known as the Texas Junior Academy of Science.

b) Organization.

A Counselor and Associate Counselor to direct the Junior Academy shall be appointed by the President of the Academy after confirmation by the Board of Directors.

Faculty members of Texas schools who are Members of the Texas Academy of Science will serve teaching faculty functions and advisory for all Junior Academy affiliated organizations.

SECTION 2. The Texas Collegiate Academy of Science

a) Purpose.

The Texas Academy of Science shall promote the organization and operation of science organizations for undergraduate students in the colleges and universities of the State of Texas. These organizations, when duly affiliated, shall together constitute and be known as The Texas Collegiate Academy of Science.

b) Organization.

A Counselor and Associate Counselor to direct the Collegiate Academy shall be appointed by the President of the Academy after approval by the Board of Directors.

Faculty members of Texas colleges and universities who are members of The Texas Academy of Science will serve teaching faculty functions and advisory functions for all Collegiate Academy affiliated organizations.

SECTION 3. Board of Development for the Texas Academy of Science Endowment Fund.

a) Purpose.

The Board of Development is responsible for securing the funding for, and the management of, an Endowment Fund for the benefit of the Texas Academy of Science.

b) Membership and Terms of Office.

The Board of Development shall have six members. The term of office shall be three years, with two members being replaced each year. Members shall be appointed by action of the Board of Directors of the Texas Academy of Science, and approved by a majority vote at the Annual Business Meeting. Vacancies occurring during a term of office shall be filled by appointment by the President of the Academy, with the approval of the Board of Directors of the Academy, and shall be for the unexpired period only. Members so appointed are eligible for appointment to a full term.

c) Chairperson.

The Board of Development shall elect its chairperson and the chairperson of the Board of Development shall make an annual written report to the Board of Directors prior to the Annual Business Meeting.

Article VI.—Affiliated Organizations

SECTION 1. Any scientific society or organization in Texas that promotes science or science education may become an Affiliate Society of the Academy upon its request, and after approval of the Board of Directors.

Article VII.—Academy Officers

SECTION 1. The officers of the Academy shall be a President, President-Elect, Vice-President, Immediate Past President, Executive Secretary, Treasurer, *Texas Journal of Science* Editor, and six elected Directors. Officers shall assume their positions as provided in the Bylaws. These officers shall perform the duties usually expected of such officers and as provided in the Bylaws.

The President, Immediate Past President, President-Elect and Vice-President shall constitute the Executive Committee, with the Executive Secretary as secretary.

SECTION 2. The officers of a Section shall be a Chairperson and if the Section desires, a Vice-Chairperson.

SECTION 3. The Executive Secretary, Treasurer and *The Texas Journal of Science* Editor shall be nominated by the President, approved by a majority vote of the Board of Directors and presented on a mail ballot for a vote of approval or disapproval by the membership. The other officers shall be elected, as provided in the Bylaws. The Treasurer shall be bonded, at the expense of the Academy, at an amount set by the Board of Directors.

SECTION 4. Terms of Office.

a) The President, President-Elect and Vice-President shall hold office for one year, or until their successors have been elected and are duly qualified. A Vice-President shall be elected each year, and shall then succeed to the offices of President-Elect and President. The Editor and Executive Secretary shall be appointed on odd-numbered years for a period of two Academy years, and the Treasurer shall be appointed on even numbered years for a period of two Academy years, and they shall hold office until their successors have been selected and are duly qualified. They may succeed themselves. Directors are elected for a term of three years and may not immediately succeed themselves. Two Directors shall be elected annually, one being chosen each year to represent non-academic members.

b) If the offices of Editor, Director, Treasurer or Executive Secretary become vacant the President shall appoint a replacement to serve out the unexpired term, subject to approval by a majority vote of the Board of Directors.

c) If the offices of President or President-Elect become vacant the remaining officers shall automatically move up to fill the vacancy or vacancies. Any offices then vacant would be filled by vote of the membership at the next election, with the nominating committee providing candidates for the vacant offices. A person moving into the office of President to fill a vacancy shall serve the unexpired term and then a full term as President.

d) Officers of the Sections shall be elected as needed at the business meeting of the Section during the Annual Meeting of the Academy. If Section leadership positions become vacant prior to the Annual Meeting the President shall appoint a Section Chairperson to act until the Annual Meeting.

SECTION 5. Removal from Office.

a) Elected Officers.

Upon the recommendation of the presiding officer at a Board of Directors meeting with a quorum present, an elected officer may be removed from office by a unanimous vote of the remaining members of the Board of Directors.

b) Appointed Officers.

An appointed officer may be removed from office by a two-thirds vote of the Board of Directors.

SECTION 6. Board of Directors.

a) The Board of Directors shall be the governing body of the Academy, with the President as

Chairman.

b) The Board of Directors shall consist of the following voting members: President, President-Elect, Vice-President, Immediate Past President, Executive Secretary, Treasurer, Editor of *The Texas Journal of Science*, the six elected Directors, the Counselor of the Junior Academy, the Counselor of the Collegiate Academy, and the Chairperson of the Science Education Committee. The Chairperson of the Board of Development and the Academy representative to the American Association for the Advancement of Science shall be non-voting members of the Board.

c) Quorum.

Eight voting members of the Board shall constitute a quorum. The requirements for special majorities such as two-thirds or three-fourths shall be applied to the number of qualified voters constituting the quorum in attendance at the meeting, with any fractional requirements rounded up to the next whole number.

SECTION 7. Program Council.

a) Membership.

The Program Council shall consist of the President-Elect as Chairperson, the Chairperson (and Vice-Chairperson if present) of each Section of the Academy, and the Counselors of the Junior Academy and Collegiate Academy.

SECTION 8. Resignation by Non-Attendance.

Any member of the Board of Directors who shall fail to attend three consecutive meetings of the Board of Directors, without being excused by that body, shall be deemed to have resigned.

Article VIII.—Committees

SECTION 1. Standing Committees.

a) Names.

The Standing Committees shall be as follows: (1) Publications (2) Elections (3) Junior Academy (4) Collegiate Academy (5) Science Education (6) Membership (7) Research Grants (8) Fellows and Honors.

b) Appointments.

The President shall be authorized to appoint, subject to confirmation by the Board of Directors, all members of the standing committees, except where membership is specified in the Constitution or Bylaws.

SECTION 2. Special Committees.

The President shall be authorized to appoint such special committees as the welfare of the Academy shall require.

Article IX.—Texas Science Council

The Texas Academy of Science shall sponsor and convene a council of representatives from organizations and societies in Texas concerned with science and science education, for the purposes of 1) discussing items of common interest, 2) reacting to requests for information and advice from state officials and agencies and 3) assembling and disseminating to the people of Texas information about Texas science.

Article X.—Finances

SECTION 1. No financial obligations shall be incurred on behalf of the Academy by an Officer or Member unless authorized by the Board of Directors.

SECTION 2. No officer, Director, or Member of the Academy may accept a gift, donation or grant to the Academy which would incur a financial obligation on the part of the Academy without the approval of the Board of Directors; nor may anyone solicit funds for a special purpose for the Academy without the approval of the Board of Directors.

SECTION 3. All fees and charges not specified in the Constitution or Bylaws shall be set by the Board of Directors, with changes in membership dues subject to approval by majority vote at the Annual Business Meeting.

SECTION 4. The funds of the Academy shall consist of a) Endowment Fund, b) Special Funds and c) General Funds.

a) Endowment Fund.

1. The Endowment Fund shall include contributions specifically designated as such, Corporate Life membership dues and one half of Regular Life membership dues.

2. The Endowment Fund may include both unrestricted and restricted funds. Each restricted contribution to the Endowment Fund must be accepted by the Board as appropriate to the aims of the Academy and each such fund shall be separately accounted in order to assure that proceeds from such contributions are used in accord with the conditions established by the donor.

The proceeds from all unrestricted contributions to the Endowment Fund shall be used as deemed appropriate by the Directors of the Academy, to further the objectives of the Academy. The Endowment Fund Principal shall be encumbered only upon a unanimous vote of both the Board of Development and the Board of Directors certifying that a financial emergency exists.

Cash contributions to the Endowment Fund shall be invested in United State Government insured securities, except in instances where donors attach specific investment conditions to their contributions.

b) Special Funds.

1. Special Funds shall consist of gifts, grants, awards, etc. which are to be expended in total within a specified period of time for a specific purpose.

2. Special funds will be separately accounted.

c) General Funds.

All funds and monies other than Endowment Funds and Special Funds shall be expended as directed by the Board of Directors, following an Annual Budget which shall be prepared by the Board of Directors, and presented to the membership at the Annual Business Meeting.

d) Financial Report.

A financial report listing the balances of funds in all of the Academy accounts as of the beginning of the calendar year, along with any encumbrances on those funds, shall be prepared by the Treasurer, circulated to the Board and presented at the Annual Business Meeting.

SECTION 5. *The Texas Journal of Science* shall be sent only to paid members. Members in arrears will be sent copies of the *Journal*, as available, upon payment of dues for the year in question.

SECTION 6. Funds collected by The Collegiate Academy and the Junior Academy shall be deposited in the General Funds, and accounted for in a line item of the General Fund Budget.

Article XI.—Bylaws

The Board of Directors shall establish such Bylaws, not in conflict with the Constitution, as they deem necessary to govern the Academy, subject to the approval procedure outlined in Section XIV of the Constitution.

Article XII.—Publications

The Academy shall publish a scientific journal, *The Texas Journal of Science* and such other publications for the dissemination of information about Academy affairs to the membership, and about science and science education to the people of the state of Texas, as are proposed by the Board of Directors and approved at the Annual Business Meeting.

Article XIII.—Archives

The archives section of the Texas A&M University Library shall be the official repository for the Archives of the Academy.

Article XIV.—Amendments

SECTION 1. The Constitution shall be amended (or revised) by the following procedure:

a) Initiation of Amendments.

1. Members of the Board of Directors may propose amendments.

2. Amendments shall be considered by the Board if presented by a petition signed by 5% of the active membership of the Academy.

b) The Board of Directors shall approve or disapprove the proposed amendment.

c) If approved, the proposed amendment shall be mailed to the membership at least 60 days prior to the Annual Business Meeting.

d) The proposed amendment shall be considered at the Annual Business Meeting and modifications made according to parliamentary procedure, with final acceptance by two-thirds vote.

e) The approved amendment shall be mailed to all members with a ballot on which they vote to accept or reject. The amendment is approved if a majority of those voting approve.

f) The date upon which the amendment will become effective if approved, shall be given on the ballot.

SECTION 2. The Bylaws shall be amended (or revised) by the following procedure:

a) Initiation.

1. Members of the Board of Directors may propose amendments.

2. Amendments shall be considered by the Board if presented by a petition signed by 5% of the active membership of the Academy.

b) The Board of Directors shall approve or disapprove the proposed amendment.

c) If approved, the proposed amendment shall be mailed to the membership at least 60 days prior to the Annual Business Meeting.

d) If approved by a majority vote of those in attendance at the Annual Business Meeting the amendment takes effect as of that date.

BYLAWS OF THE TEXAS ACADEMY OF SCIENCE 1986

Article I.—Duties of the Officers

SECTION 1. Duties of the President.

Chief Executive Officer of the Academy; Chairperson of the Board of Directors, and of the Executive Committee; makes committee appointments and fills any vacancies that may arise between Annual Meetings, subject to the provisions of the Constitution and Bylaws; ex-officio member of all committees except the Elections Committee.

SECTION 2. Duties of the President-Elect, who automatically succeeds to the office of President.

Vice-Chairperson of the Board of Directors and of the Executive committee; Program Chairperson for the next Annual Meeting; organizes and publishes the Program for the Annual Meeting; such other duties as the President may designate.

SECTION 3. Duties of the Vice-President, who automatically succeeds to the office of President-Elect.

Member of the Executive Committee; ex-officio member of the Membership Committee; Chairperson of the Fellows and Honors Committee; such other duties as the President may designate.

SECTION 4. Duties of the Immediate Past-President.

Member of the Executive Committee; Chairperson of the Elections Committee; Chairperson of the Publications Committee.

SECTION 5. Duties of the Executive Secretary.

(1) Secretary of the Board of Directors and of the Executive Committee.

(2) Keeps and distributes minutes of Board meetings, Executive Committee meetings, Academy Business meetings, and other meetings as directed by the President.

(3) Custodian of the files and records of the Academy, and keeps the files and records in good order.

(4) Remands to the archives material more than five years old and not needed for the operation of the Academy.

(5) Prepares and keeps current an information packet, and delivers copies of the packet to newly elected or appointed officers.

(6) Prepares agenda and other materials for called meetings, and distributes these materials to the officers prior to the meeting.

(7) Reproduces the "Call for Papers" form as submitted by the President-Elect, and distributes the forms.

(8) Carries out such other secretarial duties as are assigned by the President.

SECTION 6. Duties of the Treasurer.

(1) Custodian of all funds of the Academy except the Endowment Fund Principal under the direction of and subject to regulation by the Board of Directors.

(2) The Treasurer may not encumber any of the principal of the Endowment Fund or transfer any of the principal out of the fund without WRITTEN authorization showing unanimous approval of both the Board of Directors and the Board of Development. Interest from the fund may be transferred to the working funds of the Academy when requested by the President.

(3) Pays all properly invoiced bills authorized by the Budget, from the General Fund.

(a) Payment of bills not specifically authorized under a line item of the budget will require the written approval of the President.

(b) Encumbrance of monies that will cause the total amount encumbered for the year to exceed the TOTAL of the approved budget for the year may be made only with the written approval of the Board.

(4) Prepares and mails dues notices.

(5) Maintains the master copy of the membership list of the Academy, and furnishes copies to the officers as needed.

(6) Prepares and submits to the Executive Committee a monthly financial statement.

(7) Prepares financial information for use by the Board at the Fall meeting, where the budget for the coming year will be discussed.

(8) Prepares an annual financial statement for presentation at the Annual Business Meeting.

SECTION 7. Duties of the Editor of *The Texas Journal of Science.*

(1) Edits and publishes *The Texas Journal of Science* and any *Transactions* or *Proceedings* of the Academy that may be published.

(2) Receives and reviews, or sends out for review, all manuscripts submitted to the *Journal* for publications.

(3) Accepts, sends back for revision, or rejects each manuscript based on the reviews and upon the editor's judgment.

(4) Recommends for appointment Associate or Assistant Editors as necessary to ensure an adequate editorial staff.

(5) Is a member of the Publications Committee.

SECTION 8. Duties of Elected Directors.

Elected Directors shall familiarize themselves with the structure and function of the Academy, attend Board Meetings, participate in Academy affairs as requested by the President, and oversee the Academy to ensure that:

(1) procedures outlined in the Constitution and Bylaws are followed.

(2) the Academy functions within its income.

SECTION 9. Duties of the Executive Committee.

The Executive Committee shall meet at the call of the President, assist the President in planning for and executing the functions of the Academy and assist the President in preparing materials for presentation to the Board.

SECTION 10. Duties of the Representative of the Academy to the American Association for the Advancement of Science (AAAS).

The Representative shall: 1) promote the interest of the members of the Academy in the AAAS, 2) keep the Academy informed of important developments in the AAAS and in other state academies through the Council of State Academies of the AAAS, and 3) make a written report at the Board meeting of the Annual Meeting.

Article II.—Election of Officers

SECTION 1. Nominations.

(1) The Elections Committee shall present a slate of candidates to the Board at the Annual Fall Meeting.

(2) The Elections Committee shall place no candidate's name on the ballot until the candidate's eligibility has been determined by the Treasurer, and until consent to serve has been obtained from the candidate.

(3) Two candidates each shall be presented for each of the offices of Vice-President, Director-Academic and Director-Non academic.

(4) When appointments have been made for the offices of Treasurer, Executive Secretary, or Editor, the names of the appointees shall be included on the ballot with an opportunity for the membership to indicate their approval or disapproval.

SECTION 2. Voting.

(1) Ballots shall be mailed no later than 15 November, and shall be due in the office of the Chairman of the elections committee, no later than the 30th of December.

(2) The Chairman of the Elections Committee shall select three members in good standing to serve with the Chairman as a Tally Committee.

(3) All persons whose names appear on the ballot, along with the members of the Board, shall be notified promptly by letter of the results of the election.

(4) The newly elected officers shall be requested to attend the Board of Directors meeting at the next Annual Meeting.

(5) If persons appointed as Treasurer, Executive Secretary or Editor are disapproved by a majority of those voting, the office shall be vacant and new appointments shall be made.

SECTION 3. Election of Section leadership.

(1) Section business meetings shall be scheduled during the morning of the first day of the Annual Meeting.

(2) If the Section leaders agree to serve another year, the Section members must ratify the decision by vote in the Section business meeting.

(3) If new leadership is to be chosen, procedures for nomination and election should follow parliamentary procedure. No person should be nominated who has not agreed to serve.

(4) Leadership status and any necessary new addresses and telephone numbers are to be reported at the Program Committee meeting on the afternoon of the first day of the Annual Meeting.

Article III.—The Board of Directors

SECTION 1. Meetings.

The Board of Directors shall meet at least twice each year; in the Fall, when the budget for the following year will be approved, and at the Annual Meeting, where written reports of all standing committees will be discussed.

The President shall call additional Board meetings as necessary for the proper functioning of the Academy.

SECTION 2. Duties.

The Board of Directors shall:

(1) have authority to act for and in behalf of the Texas Academy of Science in all legal transactions,

(2) serve as the planning organ for the Academy,

(3) review Academy structure and function, and recommend changes where appropriate,

(4) review all proposed amendments or revisions to the Constitution or Bylaws, and recommend acceptance or rejection,

(5) serve as the court of last resort in any questions of interpretation of the Constitution or Bylaws, or the constitutionality of any act committed by the Academy or its agents,

(6) approve a Budget, and authorize the Treasurer to disburse the General Fund of the Academy, and the interest from the Endowment Fund,

(7) approve the investment of the Endowment Fund,

(8) approve appointments,

(9) elect members to the rank of Fellow, and name Patrons,

(10) create new Sections or modify current Sections when the best interests of the Academy warrant,

(11) receive and act on applications from organizations wishing to be Affiliate Organizations,

(12) establish and authorize the collection of registration fees at the Annual Meetings,

(13) determine the time and place of the Annual Meetings,

(14) review and approve the functions of the Junior and Collegiate Academies,

(15) review dues structures for the Academy and page charges for the *Journal*, and recommend changes when appropriate, and

(16) transact such other business as may arise and that has not been provided for otherwise.

Article IV.—Standing Committees

SECTION 1. Terms of Office.

(1) Appointed Chairpersons.

Chairpersons shall be appointed by the President, with the approval of the Board, shall serve for three consecutive years, and shall be eligible for re-appointment.

(2) Members.

Chairpersons shall recommend to the President persons to be appointed as committee members. Appointed committee members shall serve for three-year overlapping terms. Members shall be eligible for re-appointment.

SECTION 2. Composition of Standing Committees.

(1) Publications.

The Publications committee shall consist of the Editors of Academy publications, the Treasurer, the Immediate Past-President and two members appointed by the President. The Immediate Past-President shall be Chairperson.

(2) Elections.

The Elections Committee shall consist of the Immediate Past-President, and the next four Past Presidents available to serve. The Immediate Past-President shall be Chairperson.

(3) Junior Academy.

The Junior Academy Committee shall consist of the Counselor, Associate Counselor, three members appointed by the President, and the Directors from each organized Science Region in the state. The Counselor shall be Chairperson.

(4) Collegiate Academy.

The Collegiate Academy Committee shall consist of the Counselor, Associate Counselor, and three members appointed by the President. The Counselor shall be Chairperson.

(5) Science Education.

The Science Education Committee shall consist of the Chairperson and three members appointed by the President. The Chairperson may appoint additional members for specific tasks with the approval of the Board.

(a) Duties.

(i) make annual written reports to the Board on items of major concern to science education in the state,

(ii) recommend to the Board actions to be taken by the Academy to improve science education in the state,

(iii) assist the Board in implementing Academy efforts to support science education, and

(iv) recommend to the Awards Committee candidates for the "Outstanding Science Teacher" Award.

(6) Membership.

The Membership committee shall consist of a Chairperson and four members appointed by the President. The President-Elect shall be an ex-officio member.

(7) Research Grants.

The Research Grants Committee shall consist of a Chairperson and three members to be appointed by the President. The Research Grants Committee shall:

(a) seek sources of funds for research grants,

(b) recommend to the Board procedures for applying for grants,

(c) recommend to the Board procedures for evaluating and awarding the grants, and

(d) implement and monitor process of awarding the approved grants.

(8) Fellows and Honors.

The Fellows and Honors Committee shall consist of the Vice-President and two Fellows to be appointed by the President. The Vice-President shall be Chairperson. The Fellows and Honors Committee shall:

(a) recommend members to be made Fellows of the Academy,

(b) select the "Scientist of the Year,"

(c) recommend awards for persons who have given outstanding service to the Academy, and

(d) recommend such other awards as they deem appropriate.

Article V.—Junior Academy of Science

SECTION 1. The Junior Academy of Science shall be under the direction of the Junior Academy Committee. The purposes of the Junior Academy shall be to:

(1) organize Junior Academy sections in each Science Region of the state,

(2) promote membership in the Junior Academy,

(3) encourage scientific research in the secondary schools of Texas, and recommend for publication outstanding research studies conducted by secondary school students,

(4) recommend to the Board organizations and procedures for the Junior Academy,

(5) direct the activities of the Junior Academy under the approved procedures, and

(6) encourage and direct activities of the Junior Academy at the Annual Meeting of the Academy, and hold a business meeting of the Junior Academy for consideration at the Fall Meeting of the Board.

Article VI.—Collegiate Academy

SECTION 1. The Collegiate Academy of Science shall be under the direction of the Collegiate Academy Committee. The purposes of the Collegiate Academy are to:

(1) promote interest in science among college undergraduates,

(2) encourage original research by undergraduates, and

(3) encourage the presentation and publication of their research results.

SECTION 2. A Business Meeting of the Collegiate Academy is to be held during the Annual Meeting.

SECTION 3. The Counselor shall submit a budget for the Collegiate Academy to be considered at the Fall Meeting of the Board.

Article VII.—Meetings

SECTION 1. Annual Meetings.

(1) The Academy shall hold an Annual Meeting at a time and place selected by the Board. The time and place of future meetings shall be announced at least two years in advance.

(2) One of the sessions at the Annual Meeting shall be the Annual Business Meeting of the Academy, during which the President shall report on the status of the Academy and shall conduct such business as is called for in the Constitution and/or Bylaws.

(a) The meeting shall be conducted according to Roberts Rules of Order, Revised, unless otherwise decided upon by a majority of those present and voting.

(b) The members in good standing present at the meeting shall constitute a quorum for the conduction of Academy business.

(3) Scientific information shall be presented in the form of paper sessions, symposia, workshops, poster sessions, plenary sessions or other means, as proposed by the Program Council and approved by the Board.

(a) Symposia, workshops and plenary sessions that are multidisciplinary shall be organized under the direction of the President-Elect.

(b) Other presentations shall be under the direction of the active Sections of the Academy.

SECTION 2. Procedures.

(1) The President-Elect shall:

(a) issue calls for papers and establish deadlines for program assembly,

(b) assemble and print the program for the Annual Meeting, and

(c) supervise the physical arrangements for the Annual Meeting in cooperation with the local arrangements Chairperson of the host institution.

(2) The Section officers shall:

(a) receive and acknowledge titles and abstracts of papers proposed for presentation,

(b) arrange and schedule topically related papers according to the basic program outline agreed upon by the Program Council,

(c) notify the authors of the acceptance or rejection of their paper, and if accepted the session in which it will be presented, and inform them that the exact time and the room number will appear in the Program, and

(d) prepare, and submit to the President-Elect, copies of the sectional program, by the deadlines specified.

(3) The Program Council shall meet during the Annual Meeting, at a time specified by the President-Elect. Sections should have held their business sessions before this meeting, and both old and new Section officers should attend the Program Council meeting.

SECTION 3. Special Meetings.

The Board may call special meetings of the Academy as circumstances may require.

Article VIII.—Sections

SECTION 1. Purpose.

Sections are formed for the convenience of persons of similar interests, and to facilitate their interaction at the Annual Meeting and at other times.

SECTION 2. Organizing Procedure.

(a) A group of scientists of like interests who wish to offer papers under a specific topic not included in the current list of active Sections may request the formation of a special Section for the next Annual Meeting by letter to the Board.

(i) The letter should arrive in time to allow consideration at the Fall meeting of the Board.

(ii) The letter should include: a title for the Section, the name, address and telephone number of the person to act as temporary Chairperson, and the names of at least four persons who have agreed to present papers.

(b) If approved, information about the section will be included in the call for papers. The temporary Chairperson should then accept papers and arrange the program as outlined above in Article VII, Section 2.

(c) If interest in the Section warrants, the participants should elect a Chairperson at the Annual Meeting, and the Chairperson should attend the Program Council meeting and report the election results to the President-Elect. The Section will then be included in the list of active Sections.

SECTION 3. Deletion of Sections.

If a Section has not had a program for two consecutive Annual Meetings, it will be removed from the list of active Sections. It can be reinstated through the procedure outlined in Section 2.

SECTION 4. Active Sections of the Academy.

1. Aquatic Ecology and Management
2. Bio-Medical Science
3. Botany
4. Cellular and Molecular Biology
5. Chemistry
6. Computers in Science and Science Teaching
7. Conservation
8. Environmental Science
9. Geology
10. Mathematics
11. Physics
12. Science Education
13. Sociology
14. Systematics and Evolutionary Biology
15. Terrestrial Ecology and Management

Article IX.—Amendments

The Bylaws may be amended or new Bylaws added using procedures outlined in Article XIV of the Constitution.

This new Constitution, the third detailed revision since the chartering of the 1929 Academy, separated the Secretary-Treasurer into two offices, an Executive Secretary and a Treasurer. It assigned to the President the nomination of the Executive Secretary and the Editor of the *Journal* to be approved by a majority of the Board of Directors and presented on a mail ballot for a vote of approval or disapproval by the membership.

It made the Counselors of the Collegiate and Junior Academies, and the Chairperson of the Science Education Committee, voting members of the Board of Directors.

It makes official the name "Chairpersons" of the Sections, a change that was made from Sectional Vice-Presidents in the Programs and *Journal* in 1977.

The Texas Academy of Science Endowment Fund is to be managed by the Board of Development, which is to have six members appointed by the President and approved by the Board of Directors. All cash contributions to the Endowment Fund are to be invested in government-insured securities, except in instances where donors attach specific investment conditions to their contributions.

It established a Texas Science Council for assembling and disseminating to the people of Texas information about Texas science, thus legitimizing the Academy as the source of scientific expertise for the state, however needed. It affirms the Academy as the legacy of responsibilities for science education, the sharing of research results through annual meetings, and the publication of some of those results in a scholarly scientific journal. It makes official the annual selection of a Distinguished Texas Scientist. It also establishes an Outstanding Texas Science Educator Award to be presented for the first time at the 1989 Annual Meeting. To be selected by the Science Education Committee candidates must have been involved in teaching science to the youth of Texas in grades K-12 for at least five years.

The backbone of the institution, along with the Executive Council and the Board of Directors, are the hundreds of members who have served and continue to serve as the Vice-Presidents and Chairpersons of the sections, who make the annual meetings possible. Also, the editors of the *Journal* and other publications, and those members who present articles on their work at the annual meetings and for publication. Most important, the general membership who pay their dues and attend the meetings, without whom there would have been no Academy.

Following is a list of the annual meeting sites since 1929, of the publications of the 1929 Academy through 1987, the editors of the *Journal*, the past presidents, together with vitae and sometimes essays contributed by them and a picture when possible.

THE TEXAS ACADEMY OF SCIENCE MEETING SITES

1929 — San Antonio - five people met signed letter of Incorporation, 12 November.
1930 — Texas A&M College, College Station, 29-30 November.
1931 — Witt Museum, San Antonio, St. Anthony Hotel, 27-29 November.
1932 — Rice Institute, Houston, Lamar Hotel, 11-12 November.
1933 — Dallas, Baker Hotel, 20-21 October.
1934 — University of Texas, Austin, 16-17 November.
1935 — Texas A&M College, College Station, 7-9 November.
1936 — San Antonio, Plaza Hotel, 12-14 November.
1937 — Dallas, Adolphus Hotel, 11-13 November.
1938 — Baylor University, Waco, 10-12 November.
1939 — University of Texas, Austin, 9-11 November.
1940 — Texas Federation of Nature Clubs, San Antonio, Plaza Hotel, 7-9 November.
1941 — Dallas, Adolphus & Baker Hotels, 29 December-3 January 1942.
1942 — Texas A&M College, College Station, 12-14 November.
1943 — University of Texas, Austin, 11-13 November.
1944 — University of Texas Medical Branch, Galveston, 9-11 November.
1945 — Baylor University, Waco, 8-10 November.
1946 — Dallas, Adolphus Hotel, 11-13 December.
1947 — University of Texas, Austin, 11-13 December.
1948 — San Antonio, Plaza Hotel, 9-11 December.

1949 — Rice Institute, Houston, 1-3 December.
1950 — Southern Methodist University, Dallas, 30 November-1-2 December.
1951 — University of Texas, Austin, 6-8 December.
1952 — Texas Christian University, Fort Worth, 4-6 December.
1953 — University of Texas Medical Branch, Galveston, 3-5 December.
1954 — Incarnate Word College, San Antonio, 9-11 December.
1955 — Baylor University, Waco, 9-10 December.
1956 — Howard Payne College, Brownwood, 13-15 December.
1957 — Southern Methodist University, Dallas, 12-14 December.
1958 — Texas Medical Center, Houston Medical Center, 11-13 December.
1959 — University of Texas, Austin, 10-12 December.
1960 — Texas Christian University, Fort Worth, 1-3 December.
1961 — University of Texas Medical Branch, Galveston, 7-9 December.
1962 — University of Texas, Austin, 29 November-1 December.
1963 — Abilene Christian College, Abilene, 5-8 December.
1964 — Baylor University, Waco, 10-12 December.
1965 — Southern Methodist University, Dallas, 9-11 December.
1966 — No 1966 Annual Meeting — Date changed to March 1967.
1967 — Texas A&M University, College Station, 16-18 March.
1968 — Lamar State University, Beaumont, 14-16 March.
1969 — University of Texas at Arlington, Arlington, 13-15 March.
1970 — Angelo State University, San Angelo, 5-7 March.
1971 — Stephen F. Austin State University, Nacogdoches, 11-13 March.
1972 — Southwest Texas State University, San Marcos, 9-11 March.
1973 — University of Houston, Houston, 15-17 March.
1974 — North Texas State University, Denton, 28 February-2 March.
1975 — Sam Houston State University, Huntsville, 20-22 March.
1976 — Texas A&M University, College Station, 4-6 March.
1977 — Baylor University, Waco, 10-12 March.
1978 — Texas Tech University, Lubbock, 9-11 March.
1979 — University of Texas at Arlington, 9-10 March.
1980 — Corpus Christi State University, Corpus Christi, 6-8 March.
1981 — University of Texas at Austin, Austin, 19-21 March.
1982 — Angelo State University, San Angelo, 4-6 March.
1983 — Stephen F. Austin State University, Nacogdoches, 3-5 March.
1984 — University of Texas at San Antonio, 15-17 March.
1985 — University of Texas at Dallas, Richardson, 14-16 March.
1986 — Texas A&I University, Kingsville, 6-8 March.
1987 — Sam Houston State University, Huntsville, 5-7 March.
1988 — East Texas State University, Commerce, 3-5 March.
1989 — Lamar University, Beaumont,
1990 — Southwest Texas State University, San Marcos,
1991 — Stephen F. Austin State University, Nacogdoches,

PUBLICATIONS OF THE TEXAS ACADEMY OF SCIENCE, 1930-87

Transactions of The Texas Academy of Science, 29 May 1929 to 30 November 1929, together with the Proceedings for the same time, Volume XIV, San Antonio, 1930.

Transactions of The Texas Academy of Science, 1930 to 1931, together with the Proceedings for the same time, Volume XV, Austin, 1932.

Transactions of The Texas Academy of Science, 1931 to 1932, together with the Proceedings for the same time, Volume XVI, Austin, 1933.

Transactions of The Texas Academy of Science, 1932 to 1933, together with the Proceedings for the same time, Volume XVII, Austin, 1935.
Proceedings of The Texas Academy of Science, 1933 to 1934, Volume XVIII, Austin, 1934.
Transactions of The Texas Academy of Science, 1933 to 1934, Volume XVIII, Austin, 1936.
Transactions of The Texas Academy of Science, 1934 to 1935, together with the Proceedings for the same time, Volume XIX, Austin, 1936.
Proceedings of The Texas Academy of Science, 1935 to 1936, Volume XX, Austin, 1937.
Transactions of The Texas Academy of Science, 1935 to 1936, Volume XX, Austin, 1937.
Proceedings of The Texas Academy of Science, 1936 to 1937, Volume XXI, Austin, 1938.
Transactions of The Texas Academy of Science, 1936 to 1937, Volume XXI, Austin, 1938.
Proceedings of The Texas Academy of Science, 1937 to 1938, Volume XXII, Austin, 1938.
Transactions of The Texas Academy of Science, 1937 to 1938, Volume XXII was not published.
Proceedings of The Texas Academy of Science, 1938 to 1939, with 1940 regional meetings, Volume XXIII, Houston, 1940.
Transactions of The Texas Academy of Science, 1938 to 1939, Volume XXIII, Houston, 1940.
Proceedings of The Texas Academy of Science, 1940, with regional meetings, Volume XXIV, Houston, 1941.
Proceedings and Transactions of The Texas Academy of Science, 1941, Volume XXV, Austin, 1942.
Proceedings and Transactions of The Texas Academy of Science, 1942, Volume XXVI, Houston, 1943.
Proceedings and Transactions of The Texas Academy of Science, 1943, Volume XXVII, Houston, 1944.
Proceedings and Transactions of The Texas Academy of Science, 1944, Volume XXVIII, Houston, 1945.
Proceedings and Transactions of The Texas Academy of Science, 1945, Volume XXIX, Austin, 1946.
Proceedings and Transactions of The Texas Academy of Science, 1946, Volume XXX, Houston, 1948.
(Proceedings and Transactions of The Texas Academy of Science were no longer published after Volume XXX. They were replaced by the publication of *The Texas Journal of Science*, Published quarterly beginning with Volume I, 1949.)

The Texas Academy of Science Publications in Natural History, Non-Technical Series:
Reed, Clyde Theodore. 1941. Marine life in Texas waters.
Tharp, Benjamin Carroll. 1939. The vegetation of Texas.

The Texas Academy of Science Conservation Council Monographs:
No. 1. Sinclair, John G. 1947. The conservation of man and his resources.
No. 2. Blau, Ludwig Wilhelm. 1949. The conservation of man and the Texas Academy of Science.
Sinclair, John G. 1949. Is there enough for everybody?
No. 3. Blau, Ludwig Wilhelm. 1949. The effects of soil erosion, loss of soil fertility, storage, transportation, and processing in the nutritional value of food.
No. 4. Leake, Chauncey D. 1949. V. D. control in Texas: a major conservation problem.
Sinclair, John G. 1949. The cost of venereal disease.

Transactions of the Gulf Coast Molecular Biology Conference:
Texas Journal of Science Special Publication no. 1, August, 1976.
Texas Journal of Science Special Publication no. 3, August, 1977.
Texas Journal of Science Publication Volume XXX, no. 5, GCT vol. 13, December 1978.

The Texas Journal of Science, published quarterly:

Years	Volumes	Issue numbers per volume	Editors
1949-1952	I - IV	1-4	J. L. Baugham, biologist, Texas Game, Fish, and Oyster Commission, Rockport.
1953-1956	V - VIII	1-4	T. N. Campbell, anthropology, Univ. Texas-Austin.
1957-1961	IX - XIII	1-4	Clark Hubbs, biologist, Univ. Texas-Austin.
1962-1964	XIV - XVI	1-4	Robert E. Boyer, geologist, Univ. Texas-Austin.
1965-1975	XVII - XXVI	1-4 (XV with one issue)	Gerald G. Raun, biologist, Texas Memorial Museum, 1965, North Texas State, 1965-1973, Angelo State Univ., 1974-1975.
1976-1981	XXVII - XXXIII	1-4 (XXVIII one issue, XXIX and XXXIII two issues)	Roland G. Vela, biologist, North Texas State Univ., and Michael J. Carlo, chemist, San Angelo State Univ.
1982	XXXIV	1-4	Publications Committee.
1983-1984	XXXV - XXXVI	1-4	William J. Neill, biologist, Texas A&M Univ.
1985-1989	XXXVII, 38,39,40,41	1-4	J. Knox Jones, Jr., biologist, Texas Tech Univ.

PRESIDENTS OF THE TEXAS ACADEMY OF SCIENCE, 1929-1988

1929-1930—Reed, Clyde T., Texas College of Arts & Industries, Kingsville, naturalist.
1931—Strecker, John Kern, Baylor University, Waco, naturalist, biologist.
1932—Benedict, Harold Yandell, University of Texas, Austin, astronomer.
1933—Jones, Edward Newton, Baylor University, Waco, biologist.
1934—Tharp, Benjamin Carroll, Sam Houston State Teachers College, botanist.
1935—Godbey, John C., Southwestern University, Georgetown, chemist.
1936—Price, William Armstrong, Jr., Consultant, geologist.
1937—Baird, Don Otto, Sam Houston State Teachers College, biologist.
1938—Isley, Frederick B., Trinity University, Waxahachie, zoologist.
1939—Gooch, Wilby T., Baylor University, Waco, chemist.
1940-1941—Ullrich, Oscar A., Southwestern University, Georgetown, social scientist.
1942—Cheatum, Elmer Philip, Southern Methodist University, biologist.
1943—Burt, Frederick Arthur, Texas A&M College, College Station, geologist.
1944—Woolrich, Willis Raymond, University of Texas, Austin, mechanical engineer.
1945—Taylor, Walter Penn, Texas A&M College, College Station, zoologist.
1946—Plummer, Frederick Byron, University of Texas, Austin, geologist.
1947—Sinclair, John George, University of Texas School of Medicine, Galveston, histologist.
1948—Blau, Ludwig Wilhelm, Humble Oil and Refining, research consultant, geophysicist.
1949—Eby, James Brian, consulting geologist, Houston.
1950—Pomerat, Charles Marc, Medical College, Galveston, biologist.
1951—Doak, Clifton C., Texas A&M University, College Station, biologist.

1952—Hewatt, Willis Gilliland, Texas Christian University, biologist.
1953—Calvin, D. Bailey, Univ. Texas Medical Branch, Galveston, biochemist.
1954—Harris, Joseph P., Jr., Southern Methodist University, Dallas, biologist.
1955—Leipper, Dale F., Texas A&M University, College Station, oceanography.
1956—Finerty, John C., University of Texas Medical Branch, Galveston, anatomist.
1957—Miller, Edwin Lynn, Stephen F. Austin State University, Nacogdoches, biologist.
1958—Witt, Paul Chandler, Abilene Christian College, Abilene, chemist.
1959—Sherman, Robert C., North Texas State University, Denton,
1960—Teal, Gordon K., Texas Instruments, Dallas, chemist/mathematician.
1961—Schofield, James R., Baylor University Medical College of Houston, M.D.
1962—Duncan, Donald, University of Texas Medical Branch, Galveston, anatomist.
1963—Lee, Addison E., University of Texas-Austin, biologist, science education.
1964—Curtis, Lawrence, Fort Worth Zoological Park, biologist.
1965—Davidson, Floyd F., Baylor University, Waco, biologist.
1966—Anderson, Robin Colver, University of Texas-Austin, chemist.
1967—Brown, Sidney Overton, Texas A&M University, biologist.
1968—Boyer, Robert Ernst, University of Texas-Austin, geologist.
1969—Norris, William Elmore, Jr., Southwest Texas State College, San Marcos, biologist.
1970—Slaughter, Bob H., Southern Methodist University, Dallas, geologist.
1971—Long, James D., Sam Houston State University, Huntsville, biologist.
1972—Hubbs, Clark, University of Texas-Austin, biologist.
1973—Dixon, James R., Texas A&M University, College Station, biologist.
1974—Lundelius, Ernest Luther, Jr., University of Texas-Austin, geologist.
1975—Parks, Archie O., Jr., Southwest Texas State University, San Marcos, chemist.
1976—Hannan, Herbert Herrick, Southwest Texas State University, San Marcos, biologist.
1977—Underwood, James R., West Texas State University, Canyon, geologist.
1978—McCullogh, Jack D., Stephen F. Austin State University, Nacogdoches, biologist.
1979—Poirot, James L., North Texas State University, Denton, mathematician.
1980—Richardson, Richard H., University of Texas-Austin, biologist, geneticist.
1981—Benham, Ann, University of Texas-Arlington, chemist.
1982—Nixon, Elray S., Stephen F. Austin State University, Nacogdoches, botanist.
1983—Young, Bernard T., Angelo State University, San Angelo, physicist.
1984—Carlo, Michael John, Angelo State University, San Angelo, chemist.
1985—Clark, William J., Texas A&M University, College Station, biologist.
1986—Franklin, Billy J., Lamar University, Beaumont, social scientist.
1987—Johanson, Lamar, Tarleton State University, Stephenville, biologist.
1988—Lind, Owen T., Baylor University, Waco, biologist.
1989—Longley, Glenn, Southwest Texas State University, San Marcos, biologist.

BIOGRAPHICAL SKETCHES, ESSAYS AND PHOTOGRAPHS OF SOME LIVING PAST PRESIDENTS OF THE TEXAS ACADEMY OF SCIENCE

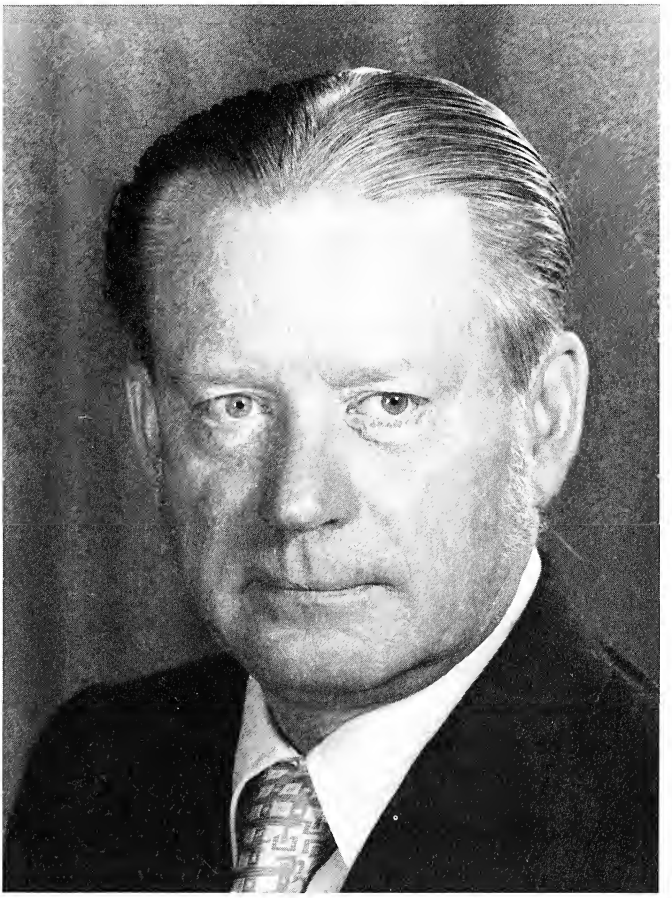

FIGURE 12. John Charles Finerty, The Texas Academy of Science President, 1956.

John Charles Finerty, anatomist, TAS President 1956. Born 20 October 1914, in Chicago. A.B. Kalamazoo College, 1937; M.S. Kansas State College, 1939; Ph.D. University of Wisconsin, 1942; Rackham Foundation Fellow in physiology, University of Michigan, 1943; Instructor in Anatomy 1943-46; Assistant Professor Washington University, St. Louis, 1946-49; Professor Anatomy and Assistant Dean 1949-56, The University of Texas Medical Branch; Professor, Chairman of Anatomy Department and Associate Dean, The University of Miami School of Medicine, 1956-66; and Louisiana State University School of Medicine Dean and Professor of Anatomy, 1966-1974. He is a member of Sigma Xi and other professional and scientific societies. A co-author of 59 published articles in various scientific publications and 43 published abstracts of papers presented at scientific meetings. He has been listed since 1944 in most of the biographical abstract publications. His comments to me in response to my request follow.

"Even though my period of active participation in affairs of the Academy was relatively short, it provided me the opportunity to become acquainted with many outstanding scientists

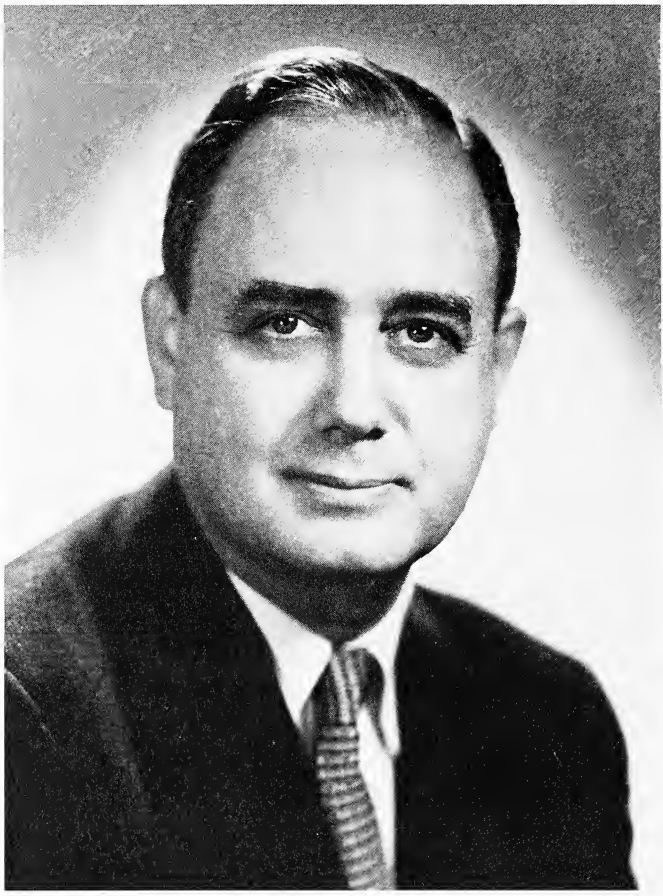

FIGURE 13. Gordon Kidd Teal, The Texas Academy of Science President, 1960.

and educators from colleges and universities throughout Texas. I served as local Chairman of the 1953 Meeting in Galveston, as Vice-President for Conservation, and Executive Vice-President in 1954. My most significant accomplishment as President was appointment of the first Board of Science Education.

"During the 1950s The University of Texas Medical Branch in Galveston used the Academy as a means of contacting pre-medical advisers and other scientists in Texas to significant mutual advantage. During that period Chauncey Leake, Dea Bailey Calvin, Donald Duncan, Charles Pomerat, and John Sinclair served as officers and Presidents of the TAS.

"I believe that the success of state academies is directly dependent upon participation of all scientists in a state, from small colleges as well as from major state universities and private industry. A state academy provides an excellent forum for beginning scientists. My first paper from platform and subsequent publication was at the Kansas Academy of Science..." (28 May 1987).

Gordon Kidd Teal, internationally famous inventor, chemist, physicist, mathematician. TAS President 1960. Born 10 January 1907, Dallas, Texas. B.A. Baylor University, 1927; M.S. 1928 and Ph.D. 1931, Brown University. He was with Bell Telephone Laboratories 1930-1952; Texas

Instruments, 1952-1965; National Bureau of Standards, 1965-1967; Texas Instruments, 1968-1977. Since 1977, he has served, and continues to serve, on many boards of universities, governmental agencies, and industry, as trustee, advisor and consultant. He is a member of Sigma Xi, a Fellow of the Institute of Electrical and Electronic Engineers, the American Association for Advancement of Science, The Institution of Electrical Engineers (United Kingdom), the American Institute of Chemists, The Texas Academy of Science, and the Washington Academy of Science. He is a member of most national and international scientific institutions in his field. He has received many honors, among them the Medal of Honor from the Institute of Electrical and Electronics Engineers, 1968. He is best known for his research in single crystals of germanium and silicon as applied to the transistor and integrated circuits. In 1970, he received the Medal for Creative Invention from the American Chemical Society, and in 1974 the Wilfred T. Doherty Recognition Award from the Dallas-Fort Worth Section of the ACS. He received the First Commercial Silicon Transistor Citation Award from Texas Instruments and in 1980, the Semmy Award from the Semiconductor Materials and Equipment Institute in 1984. He has authored and coauthored more than 25 published papers, presented invited papers to many scientific meetings and symposia, and produced numerous reports. He holds 64 patents in the United States and other countries. He is listed in most who's who biographies.

Dr. Teal became a member of The Texas Academy of Science in 1953, served as Vice-President for Physical Sciences, 1958, Executive Vice-President, 1959, President, 1960, and Director, 1960-1962. He was instrumental in bringing about the successful joint meeting of the National Academy of Sciences and the Texas Academy of Science to The University of Texas at Austin in 1962, which brought about the letter quoted earlier from the NAS Home Secretary to Dr. Duncan, then TAS President, and published in the Newsletter, volume I, issue 1, February 1963.

Addision Earl Lee, biologist, TAS President 1963. Born in Maydelle, Texas, 18 June 1914. B.S. Stephen F. Austin State Teachers College; M.S. Texas A&M College, 1937; Ph.D. The University of Texas-Austin in botany, zoology, and education. He was a biology teacher for 45 years, 34 years at Austin. He held many positions in science education, has been and continues to be, although theoretically retired, active in all phases of curriculum and instruction. He is recipient of the Robert H. Carleton Award from the National Science Teachers Association. He has been an inspiration to the many Junior Academy science clubs that he has visited and with whom he has worked. He is the coauthor or editor of 29 books and seven position papers on elementary and high school courses in science. He has published 51 papers in various journals. He is a member of several scientific and educational societies. His comment to me on the Academy follows.

"The Texas Academy of Science has been very important to me. It has given me an opportunity to become acquainted with many of the scientists in the State, and to exchange ideas with them. I think the Academy is very important for the future of science and science education in Texas" (2 June 1987).

Floyd Francis Davidson, biologist, TAS President 1965. Born in Ferris, Texas, 23 August 1906. B.A. and M.A., 1932 and 1933, Baylor University; Ph.D., 1941, University of Texas at Austin. Spent one year at Stephen F. Austin University as instructor before joining the U.S. Army Air Force. Commissioned as 2nd lieutenant. Served in various positions in the Medical Administrative Corps, promoted to Captain, honorable discharged in 1946. Joined the Biology Department of Baylor University in 1946 as Associate Professor, Professor in 1948, Chairman of the Department 1966-1977, retired as Emeritus Professor/Chairman of Biology.

Has been active, and continues to be, in academic, civic, and professional organizations. President of the Baylor chapter of AAUP, North Texas Biology Society, Baylor chapter of Sigma Xi and other scientific organizations. He has received many special awards and was nominated for

FIGURE 14. Addison Earl Lee, The Texas Academy of Science President, 1963.

the Piper Award in 1959. He is listed in the Who's Who in the South and Southwest and the American Men of Science.

Dr. Davidson published 12 articles of his research in botany in various journals, including The Texas Journal of Science. He has just completed a manuscript on "One-hundred forty years of biology at Baylor University," which was in press as of January 1988, to be released during the year.

Robert Ernst Boyer, geologist, TAS President 1968. Born 3 August 1929, Palmerton, Pennsylvania. B.A. Colgate University, 1951; M.A. Indiana University, 1954; Ph.D. University of Michigan, 1959. Joined The University of Texas at Austin as Instructor in the Department of Geological Sciences, 1957-1959; Assistant Professor, 1959-1962; Associate Professor, 1962-1967; Professor of Geological Sciences and Education, 1967 to present; Chairman of the Department 1971-1980; Dean of the College of Natural Sciences 1980-present.

His awards include the Autometric Award for coauthored publication of Patterns from Apollo VI photos and the New York Academy of Science Book Award Program for his book *The Story of Oceanography*; Special Service Award, Geology Foundation Advisory Council, 1980; The Neil A. Miner Award, National Association of Geology Teachers, 1980; named to

FIGURE 15. Floyd Francis Davidson, The Texas Academy of Science President, 1965.

the Robert E. Boyer Centennial Professorship in Geology, 1982; Distinguished Service Award, Gulf Coast Association of Geological Societies, 1982.

He holds membership in the scientific and geologic societies, and the teachers associations. He has edited several journals and newsletters, served on committees, as vice-president, president, of AAPG, AGI, GSA, Austin Geological Society, GSA, GCAGS, National Association Geology Teachers, and Sigma Xi.

He has delivered more than 35 invited lectures, published 35 articles on earth science and education, coauthored 10 books and manuals, creative works, has had published 35 abstracts of papers presented.

He is listed in most of the Who's Who books, including American Men of Science and Marquis' directories.

William Elmore Norris, Jr., scientist, educator, President TAS 1969. Born 23 February 1921, Nixon, Texas. B.S., chemistry and mathematics, Southwest Texas State Teachers College, 1940; Ph.D., physiology, physical and biochemistry, microbiology, The University of Texas at Austin, 1948. He was chemistry laboratory assistant at Southwest Texas State 1938-39; Tutor and Instructor in Physiology, The University of Texas at Austin, 1940-1947; Instructor and Assistant

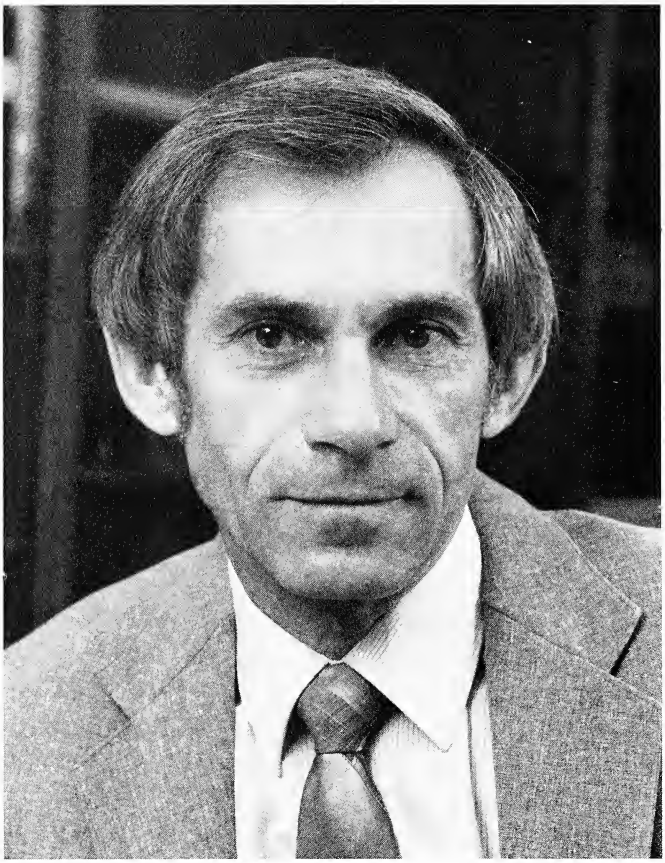

FIGURE 16. Robert Ernst Boyer, The Texas Academy of Science President, 1968.

Professor of Biology, Bryn Mawr College, 1947-49; Professor, Chairman of the Department of Biology, Dean and Professor, School of Science, 1949-70; at Southwest Texas State College; when it became Southwest Texas State University he was Professor, Dean of the College of Arts and Sciences; Associate Vice President, and Vice President for Academic Affairs, 1970-1982; He became part-time teacher of Biology in 1982. He is a Fellow of AAAS, a member of Sigma Xi, AAUP, and most other scientific and professional societies in his field.

He has authored and coauthored 29 articles published in various journals, including The Texas Journal of Science, specializing in studies of onion root respiration and *Avena* coleoptiles. He coauthored with W. K. Davis, R. T. Gary, and G. C. Farr, a laboratory manual for general biology in 1956, which was revised in 1973 and divided into two manuals—*Laboratory Exercises for general zoology* and *Laboratory exercises for general botany*, published by American Press, Boston.

He is listed in several of the Who directories including Marquis' Who's Who in America, 42nd edition, 1982-1983.

Bob Hayden Slaughter, paleontologist, educator, TAS President 1970. Born 17 April 1928, Dallas, Texas. Assistant Professor, Associate Professor, Professor, Southern Methodist University, Director of Shuler Museum of Paleontology, 1966 to the present.

FIGURE 17. William Elmore Norris, Jr., The Texas Academy of Science President, 1969.

He has published more than 60 scientific papers, 25 popular magazine articles, and three books. Copeia, the Journal of Paleontology, The Texas Journal of Science, the Graduate Research Center of SMU, the Yale Peabody Museum of Natural History, and Science, among others have published his work in vertebrate paleontology, reservoir basins, Pleistocene mammals, the Cretaceous of Texas, and other paleontological subjects. He has coauthored with several colleagues including a recent article on "Fossil Vertebrates of Formations Outcropping in the Dallas, Texas, Area," in *Geology of Dallas County*, with Toni Herrin of Southern Methodist, published by the Dallas Geological Society.

He has led Smithsonian Institution expeditions to Egypt, Lebanon, and Mallorca. The National Geographic Society was the sponsor of his work in Panama. The National Science Foundation sponsored his work in South England, Mexico, and the Southwest United States.

In 1983, he received the Award for "Distinguished Achievement in the Earth Sciences" from the American Federation of Mineralogical Societies. He was the 1970 representative of the Society of Vertebrate Paleontology to the American Geological Institute. He was one of only 12 American Professors from all fields to be cited by People Magazine for Teaching Excellence.

Dr. Slaughter has retired from teaching but continues to direct the Shuler Museum. Along with this work he is at present building an art facility and foundry in Ladonia, Texas, where he spends about half of his time.

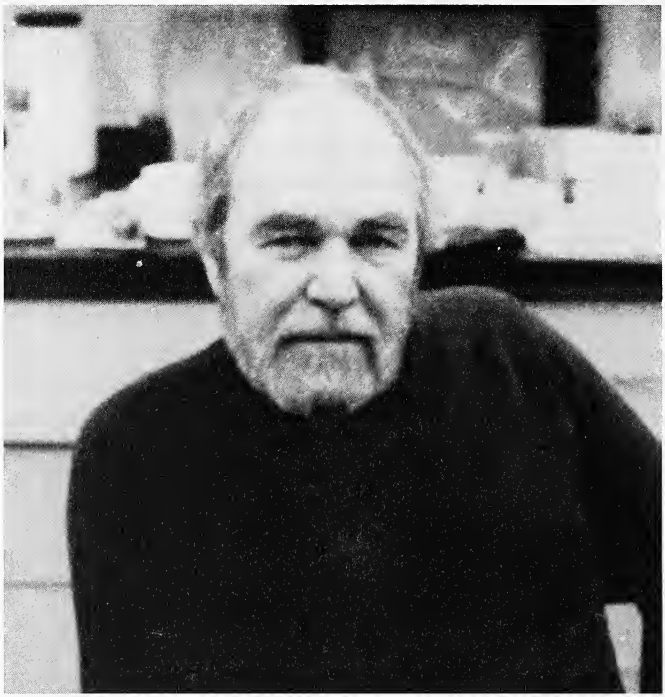

FIGURE 18. Bob H. Slaughter, The Texas Academy of Science President, 1970.

He is a member of the Society of Vertebrate Paleontologists, the American Society of Mammalogists, the National Association of Geology Teachers, and continues to be an active member of the Academy.

James Duncan Long, biologist, TAS President 1971. Born 23 September 1925, Rust, Texas. B.S. and M.A. Sam Houston State Teachers College. 1948 and 1951; Ph.D. The University of Texas at Austin, 1957; Science Teacher, Groveton High School, 1948-49; Lanear Junior High School, Houston, 1951-52. Instructor in Biology, Lamar State College of Technology, Beaumont, 1952-53; Laboratory Instructor and Research Assistant, The University of Texas at Austin, 1953-56; Associate Professor and Head of the Biology Department, Illinois College, Jacksonville, Illinois, 1956-59; Associate Professor, Professor, and Director, Sam Houston State College and Sam Houston State University, 1959 to the Present.

Dr. Long served the American Mosquito Control Association as Regional Director and was president of the Texas Mosquito Control Association in 1964 and 1971. He has been Chairman of TMCA committees and workshops, and is AMCA Newsletter Editor at present. He was President, Sigma Xi Sam Houston State University Club, 1972-73, and Chairman, Texas State Committee on Undergraduate Education in the Biological Sciences meetings, 1968, 1972, and 1980. He was cited as Outstanding Educator of America 1971 and 1974, and is a member of the American Institute of Biological Sciences. He is listed in American Men and Women of Science, Marquis' Who's Who Biographies, and the Dictionary of International Biographies. In 1984, he was presented with a special Distinguished Service Award by The Texas Academy of Science in recognition of his long service in many capacities to the Academy. Dr. Long's comments follow below.

"My first experience with The Texas Academy of Science was as a student attending the 1949 or 1950 Annual Meeting on the Texas A&M campus. This was my first occasion to hear

FIGURE 19. James Duncan Long, The Texas Academy of Science President, 1971.

scientific papers and to meet well known Texas scientists. To say that this experience had a lasting impression on me is an obvious understatement.

"Meeting and exchanging views with science students, faculty and administrators from across the state has been very useful during the various stages of my career. Although I have learned a lot in this fashion, I have also become aware that others share problems I have, and this has proved comforting at the very least.

"It has become my opinion that the Academy has often failed to represent Texas scientists well in recent years. Several state-wide studies have arisen—the two state select committees, one of secondary education and another on higher education, and S. B. 994 relating to teacher certification—with no organized input from Texas scientists. The Academy should provide an avenue for scientists to become involved in such matters, but has done a poor job of this through the years.

"In the immediate past, almost all of the Academy resources have been directed toward support of The Texas Journal of Science. Although such an emphasis was possibly justified when the Journal was founded, such an effort is hard to understand today. Excellent regional journals are now available in almost every subject area of science for Texas scientists to use for publication purposes.

"Although the annual meeting is the activity in which the majority of TAS members participate, essentially none of the Academy's revenues support this event directly. In fact any excess

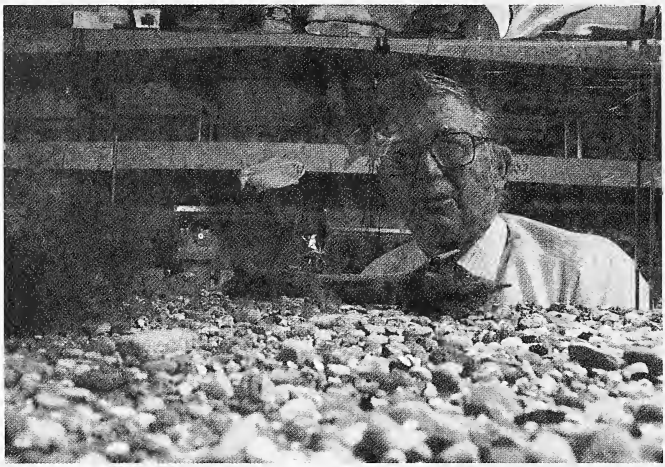

FIGURE 20. Clark Hubbs, The Texas Academy of Science President, 1972.

funds generated by registration fees are quickly absorbed by other activities including the Journal. In the future, more emphasis should be placed toward enriching the annual meeting program.

"To avoid encountering past problems in the future, it seems to me that the Academy should give serious consideration to phasing out publishing The Texas Journal of Science. Since the need for this publication is at least questionable, the resources of the Academy can be better used to support more productive activities. We have never been able to offer the *Journal* what it needs to be truly outstanding. Other publications, such as a Proceedings (of annual meetings) and a Bulletin or Newsletter, would serve more Academy members and be a more reasonable use of resources.

"Both the Collegiate and Junior Academies of Science program deserve more support than has been given in the past. Funds for a number of awards and grants should be made available to participants in these programs. The future of the Academy as a whole may well be determined by how well we treat today's students."

Clark Hubbs, zoologist, TAS President 1972. Born in Ann Arbor, Michigan, 15 March 1921. A.B. University of Michigan, 1942; Ph.D. Stanford, 1951. Instructor in Biology, Hopkins Marine Station, 1948. Instructor in Zoology, Assistant Professor, Association Professor, Professor, Chairman, the Division of Biological Sciences, Graduate Studies Committee, Chairman of the Department of Zoology, and at present the Clark Hubbs Regents Professor, an endowed professorship, all at The University of Texas at Austin since 1949. He has been Curator of Ichthyology, Texas Memorial Museum, from 1978 to the present.

He served as Editor of The Texas Journal of Science 1957-1961, and Managing Editor of Copeia, 1971-1984. He served as President of the Southwestern Association of Naturalists, 1966-1967. He is a member of many national and international scientific societies including the American Institute of Biological Sciences and the American Society of Ichthyologists and Herpetologists, which he served as President in 1987 and on the Board of Governors for which he has served many years.

He has published 183 articles in various journals including Copeia, The Texas Journal of Science, Zoologica, Southwestern Naturalist, American Naturalist, Ecology, Science, Bulletin of the California Academy of Science, Japanese Journal of Ichthyology and African Aquarist; also, 34 book reviews and 36 articles annually in the Encyclopedia Brittanica.

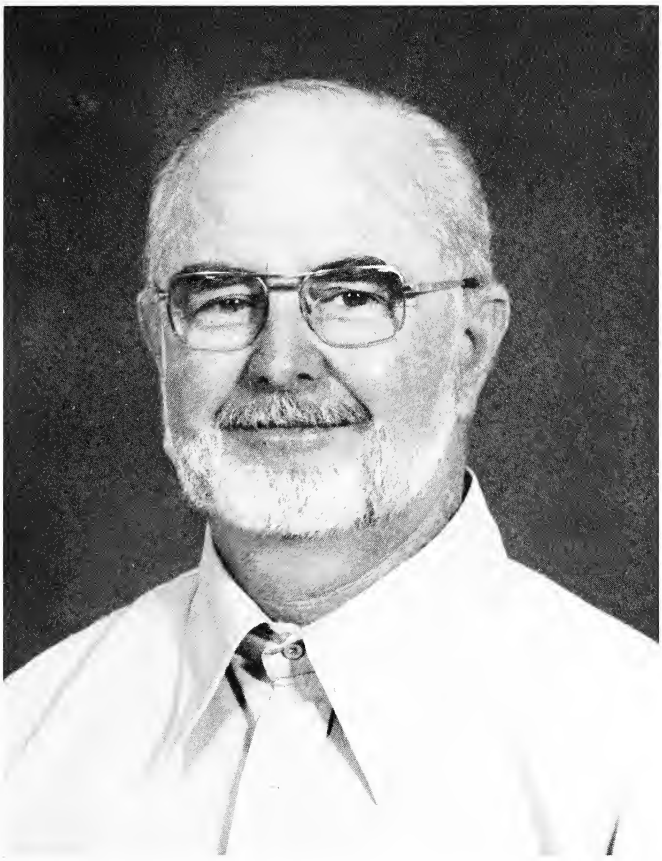

FIGURE 21. James R. Dixon, The Texas Academy of Science President, 1973.

As this goes to press he has received the 1988 Excellence Award from the American Fisheries Society. He is listed in Marquis' Who's Who in America, other Marquis biographies, American Men of Science, and the International Directory of Distinguished Leadership.

Dr. Hubbs comments to me: "The research program under my supervision is designed primarily to answer two sequential questions: Why are animals (fishes) able to live in their environments? And how did they become adapted to succeed there? My comments about TAS are minimal, in part because of a major interval since I was an officer. I have long felt that academic scientists have an obligation to their profession. Consequently, I have been an editor for a substantial part of my career. This service is typically rewarded by the quality of the product (i.e., the Journal) produced. Additionally, there is a secondary reward that is commonly accrued by working officers — election to the office of President."

James R. Dixon. biologist, herpetologist, TAS President 1973. Born 1 August 1928. B.A. Howard Payne University, biology, 1950; M.S. and Ph.D., Texas A&M University, wildlife and zoology, 1957 and 1961. U.S. Marine Corps, Korea, 1950-1953; Curator of Reptiles, Ross Allen Reptile Institute, 1954-1955; Teaching Assistant, Instructor, Assistant Professor, Texas A&M University Veterinary College, 1955-1961; Assistant Professor, New Mexico State University, 1961-1965; Associate Professor, University of Southern California, and Curator, Los

Angeles Museum of Natural History, 1965-67; Associate Professor, Professor, Texas A&M University, 1967 to the present; Chief Curator, Texas Cooperative Wildlife Collections, 1971-1985.

President: Southwestern Association of Naturalists, 1970; Society for the Study of Amphibians and Reptiles, 1974; Texas Academy of Science, 1973; Texas Herpetological Society, 1961, 1971; Herpetologists League, 1987-1988; Texas A&M Chapter, Sigma Xi, 1983. Governor or Director, Southwestern Association of Naturalists, 1966-1969; Society for the Study of Amphibians and Reptiles, 1970; American Society of Ichthyologists and Herpetologists, 1966-1968; Herpetologists League, 1968-1971; North Texas Herpetological Society, 1985-1987.

He has published more than 145 technical papers in many journals including Copeia, Herpetologica, The Texas Journal of Science, Southwestern Naturalist, Journal of Herpetology, and American Philosophical Society. He has published two books, one of them by the Texas A&M University Press, *The amphibians and reptiles of Texas, with keys, taxonomic synopses, bibliography, and distribution maps.* His research has been principally in the area of vertebrate systematics and natural history, with emphasis in the neotropics.

Comments of by Dr. Dixon, 3 March 1987: "The most memorial part of my stint as President of the TAS, was the realization that when I accepted the gavel the Society was more than $10,000 in the red, and we had to take drastic action to keep from going under. We accepted a donation from Fanny Brice for more than $4000 and used a Savings Account in Bryan Savings and Loan to pay the rest. Then we went on a 'pay as you go' basis for the rest of my stint, and I understand that we are still working under that arrangement. We initiated safeguards immediately upon finding the red ink, and we have followed those ever since that fateful day."

Ernest Luther Lundelius, Jr., geologist, paleontologist, TAS President 1974. Born 2 December 1927, Austin, Texas. B.S. The University of Texas at Austin, 1950; Ph.D. University of Chicago, 1954; Post-doctoral Fellowship, California Institute of Technology, 1956-1957. Field Assistant, River Basin Survey, Bureau of Economic Geology, and Princeton University, 1948, 1949, and 1950-1954; Assistant Professor, Professor, The University of Texas at Austin, and John A. Wilson Professor of Vertebrate Paleontology, 1957 to the present.

He received the Fulbright Fellowship in 1954-1955, and the Fulbright Senior Scholar Award, 1976. Secretary-Treasurer, 1975-1980, Vice-President, 1980, and President. 1981, of the Society of Vertebrate Paleontology. He is a member of several scientific societies, among them Sigma Xi, GSA, SEPM, National Association of Geology Teachers, American Society of Naturalists, and American Society of Mammalogists.

His research specialty is the Pleistocene and Holocene mammals. He has authored and coauthored 31 articles and abstracts, abstracts of papers presented at scientific meetings, and several book reviews. He is listed in American Men and Women of Science, 1972, Marquis' Who's Who in America, 1986-1987, Who's Who in the South and Southwest. His comments follow.

"I was persuaded to run for the office of President-Elect by Dr. Clark Hubbs of the Zoology Department of the University of Texas. I did so with some reluctance not having served as any other officer of the Academy previously except as an organizer of one or two sessions and a symposium. I finally agreed to be a candidate and somewhat to my surprise I was elected. I served as the President-Elect and as President, 1974-1975 and as Past President in 1976. The first task I was faced with was to put together the program for the meetings of the Academy held in Denton, Texas, in March 1974. This turned out to be a fair amount of work but gave me a great deal of insight into the people and the areas of interest of members of the Academy. As such it has been very valuable. A major problem arose in the Academy about this time having to do with a rather large debt that the Academy owed the University of Texas Printing Division for printing The Texas Journal of Science. This was the subject of a good many meetings of the Board of Directors for about a year involving Archie Parks at San Marcos, Michael Carlo from San Angelo, Gerald Raun from San Angelo, and a number of other people from time to time. In the end, Clark Hubbs and I negotiated with the University a plan to pay off the

FIGURE 22. Ernest Luther Lundelius, The Texas Academy of Science President, 1974.

debt in a period of a few years. We also, at the same time and in connection with this, changed the schedule for payment of the dues to the Academy from the anniversary date of a member's joining to once per year—at the end of the year. This made it much easier for budget planning. In the end, after having apparently demonstrated that the Academy was capable of running its affairs in a responsible manner, an anonymous donor cleared the debt and put the Academy back on a much stabler fiscal basis. I remember that all of us breathed a sigh of relief when this happened although we were confident that our original plan would work.

"My years of service to the Academy has many pleasant aspects in addition to the rather trying ones detailed above. I got to know a large number of people in various disciplines from various schools around the state and I still think of these people with pleasure. I also came to realize that the Academy has a great potential for advancing science education in Texas, which I suspect is only being partly taken advantage of. All in all I look back on my three years as an officer of the Academy with pleasure and the pleasant aspects of those years completely overshadow the problems that those of us who were officers at the time had to deal with."

Archie Oliver Parks, Jr., chemist, mathematician, TAS President 1975. Born 18 February 1918, near Waco, Texas. B.A. Sul Ross State University, 1942; M.A. Southwest Texas State University, 1947; Ph.D. Louisiana State University, 1957. He enlisted in the Army Air Corps as

FIGURE 23. Archie Oliver Parks, The Texas Academy of Science President, 1975.

an aviation cadet in 1942, comissioned as navigator. He taught navigation at Kelly AFB, Hondo AFB, and Ellington AFB, taking time out from teaching in late 1943 to fly a tour of combat. He was separated from the service in 1945 with the rank of captain. Instructor in Chemistry and Assistant Professor, 1947-1948, 1952-1953, Southwest Texas State University; teacher of navigation with United States Air Force, 1951-1952; resumed teaching at SWTSU in 1957 with rank of Associate Professor, Professor and Chairman of the Department of Chemistry, 1959; resigned the Chair in 1968, but appointed Dean of the School of Science in 1970, where he served until 31 August 1977 when he retired because of ill health. He had suffered a heart attack in March of 1977.

Herbert Herrick Hannan, aquatic biologist, TAS President 1976. Born Liberty, Maine, 3 April 1929. B.S. Southwest Texas State College, biology and chemistry, 1957; M.A.T. Brown University, biology and chemistry, 1961; M.A. Southwest Texas State College, biology, counseling, 1963; Ph.D. Oklahoma State University, zoology (limnology), physiology, 1967. Dickinson Independent School District Coordinator of Sciences, Assistant Principal and Instructor, 1957-1959; Union Carbide Chemical Company, Chemical Analyst. 1958-1959; Instructor, Assistant Professor, Associate Professor, Professor and Chairman, 1960 to the present, Southwest Texas State University.

FIGURE 24. Herbert Herrick Hannan, The Texas Academy of Science President, 1976.

His research interest has been limnology—reservoir limnology, eutrophication. He is author and coauthor of more than 17 published articles in various scientific journals such as Hydrobiologia, Limnology, and Southwestern Naturalist. and results of several symposia. He is listed in Leaders in American Science and other biographies. His comments follow.

"As to my thoughts about the Academy while I was President, they revolve around making enjoyable and everlasting friendships, my graduate students, times and places, the horrible financial status of TAS, dedicated people, and Texas science. For the sake of brevity (and history), I will touch on what is most memorable while I served TAS as President during 1976. Without doubt it was the financial condition of the Academy, which had been deteriorating for years. In a 1968 TAS newsletter, Dr. Sidney O. Brown, president of TAS for that year, warned the membership that TAS was operating under a financial crisis. In a subsequent newsletter in 1973, Dr. James Dixon, president, also pointed out the plight of the Academy. Such was the financial history and condition when I became president in 1976.

"As president, I called almost monthly meetings to address our financial exigency. Much research went into making decisions and formulating policy at these meetings. They were not easy ones. Toes were often stepped on....These meetings were successful as we finished the year in the black.

"This success, if it could be considered as such, of establishing solvency for the Academy in 1976, could be attributed to many people, among them James Long and Everet Wilson of Sam

FIGURE 25. Jack D. McCullough, The Texas Academy of Science President, 1978.

Houston State University, Huntsville, Texas. Without these people there would be no TAS as we have been privileged to have for over 50 years. I take this opportunity to salute them."

Jack D. McCullough, biologist, TAS President 1978. Born in San Antonio, Texas. Bachelor of Science Degree from The University of Texas at Austin, Master's Degree from Stephen F. Austin State University, and Doctor of Philosophy Degree from Texas A&M University. He has been an Instructor at Texas A&M University and is currently a Professor of Biology at Stephen F. Austin State University, where he has been honored as a Regents Professor and as an Alumni Association Distinguished Professor. He was a captain in the United States Army. He has been active in The Texas Academy of Science for many years. He has published more than 40 scientific papers and technical reports, in various scientific journals including The Texas Journal of Science, Journal of the Tennessee Academy of Science, The Proceedings of the Louisiana Academy of Science, Nautilus, Hydrobiologia, and Internationale revue der gesamteen hydrobiologie. His specialty has been Texas water resources, limnology, ecology, and wilderness areas. His comments on his term as President of the Academy follow.

"My presidential term (1977-1979) was during financially troubled times for the Texas Academy of Science. Two years before, the Academy found itself deeply in debt, and during my term the organization was still recovering from that crisis. In an attempt to keep tight control on the finances, the Board of Directors met every three months to approve quarterly budgets.

The Texas Journal of Science was found to be causing the major financial problem. When the Board raised the manuscript page cost to $35 per page, payable by the author, the financial position of the Academy began to stabilize.

"The Board of Directors also took steps to see that manuscripts reviewed for publication in the Journal were reviewed by a diverse group of experts from universities all across the state, and not by a few selected individuals. The Board also instructed the editor of the Journal to annually publish the list of experts used to review manuscripts during the past year. In my opinion, this move greatly increased the quality of the manuscripts and enhanced the scholarly image of the Journal.

"The center piece of my term as president of The Texas Academy of Science was the creation of the annual Distinguished Scientist Award. The first Award was given in 1979 at the Annual Meeting of the Academy at The University of Texas at Arlington. The recipient was Dr. Michael Debakey, the internationally famous heart surgeon. I think the annual award has been a very successful idea. The presentation is always a highlight of the annual meeting and the list of recipients is indeed impressive.

"The Texas Academy of Science is now on a solid financial foundation thanks to the work of many individuals through the years, and I think the future of the organization is very promising. The Texas Journal of Science continues to produce an outstanding quarterly journal that is widely subscribed to around the world, and the quality of manuscripts accepted for publication reflects the desire of the Board of Directors for excellence. The Academy will continue to be a strong and professionally active organization as long as the scientists in the state continue to participate in, and support, its activities. The Texas Academy of Science, after all, is not a reflection of the scientists of the nation, but of the scientists of Texas. It is our Academy, and I think our pride demands that we keep it a first class professional organization."

Richard H. Richardson, geneticist, TAS President 1980. Born 24 March 1938, Mexia, Texas. B.S. Texas A&M University, 1959; M.S. and Ph.D. North Carolina State University, 1962 and 1965. Graduate Fellow and Research Assistant, North Carolina State University, 1959-1964. Postdoctoral Fellow, Lecturer, and Assistant Professor, The University of Texas at Austin, 1964-1970; Visiting Professor, University of Puerto Rico, Rio Piedras, 1970; Visiting Professor, University of São Paulo, Brazil, 1974; Associate Professor, Professor, The University of Texas at Austin, 1969 to the present. A member of Sigma Xi, Genetics Society of America, Society for the Study of Evolution, AAAS, American Society of Naturalists, and other scientific societies. Editor of the Texas Native Prairie Association Newsletter and on the Research Committee of the Center for Holistic Resource Management.

He has authored and coauthored 46 publications in various scientific journals, including two books: *The Screwworm Problem* and *Introduction to Modern Genetics*; seven technical reports, 2 book reviews, 25 abstracts, and 52 invited papers, symposia, workshops, conferences, at universities throughout the United States. His specialty has been the *Drosophila*. He is at present working on a book documenting the details of the history of agriculture policies and academic changes since 1945, the end of the Second World War. Some of his following comments are excerpted from that work.

While I was President (of TAS) I was especially interested in getting opposing factions working together. The Texas Academy has long been effective in several areas of focusing scientific talent for public service, but the committee leadership was often unbalanced in their focus. I tried to set up Co-Chairmen of the committees with different views.

There were less activities than I had hoped for, but I did learn in practice that it is important for people to work together rather than take sides if we were going to be effective in public leadership. Of course our focus was also to get The Texas Journal of Science on a sound financial and publication basis. One year was too short a time to have much lasting impact on TAS, and we were all aware of the need to get better continuity in the energy focused through the Board of Directors and the Officers. We made some headway on this. This lack of long term

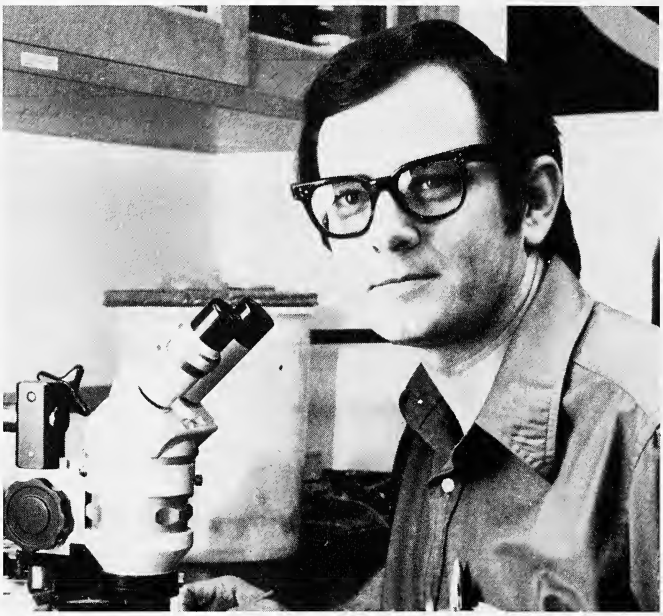

FIGURE 26. Richard H. Richardson, The Texas Academy of Science President, 1980.

influence was the area of my tenure that I found most frustrating. We spent a lot of energy on cleaning up problems, and had too little left over to apply to reaching visions for the future.

"My research has shifted recently to biotechnology and agriculture, blending the practical experience of my earlier years of ranching, farming and business with my academic years. I am interested in integrating the practical into the theoretical areas of biological sciences that I have researched—genetics, ecology, behavior, developmental and molecular biology. I am interested in policy analysis and development whereby agriculture and agriculturists may be extracted from the economic and environmental road to disaster.

"From my background I believe that I can see hope and a way to modify the direction of change. I am taking a leave from teaching in order to prepare a book on the history of our changes in agriculture from the focus on the producer—farmers and ranchers—to manufacturers and marketeers of equipment, supplies and services to producers....I believe we can reverse the pattern. I think it is possible to effectively and appropriately use the technology and talent of producers—farmers and ranchers. I am putting some of the thoughts about how this can be done in the book."

Ann Benham, chemist, TAS President 1981. B.S. in chemistry. University of Michigan; M.S. in analytical chemistry, University of Michigan. Instructor, Assistant Professor, Associate Professor, The University of Texas at Arlington, 1960 to the present. Associate Director, Director, Science Learning Center, The University of Texas at Arlington, 1976 to present; Director, Women in Science Program, 1976 to 1986.

Ms. Benham is a member of the American Chemical Society, AAAS, National Science Teachers Association, Association of Women in Science, Past President of the Dallas Society of Analytical Chemists, and other scientific societies. She has presented 27 papers to various scientific society meetings throughout the United States, and conducted more than 20 conferences and workshops on Science Education. She has conducted, planned, directed, and participated in many conferences and workshops pertaining to Science Education, especially for women; served

FIGURE 27. Ann Benham, The Texas Academy of Science President, 1981.

as a consultant to the Fort Worth Independent School District and on the State Textbook Selection Committee for Chemistry I and Chemistry II. She has served on the advisory committee for several projects for the Texas Education Agency, and has been director for numerous grants for the National Science Foundation, Department of Energy, Department of Education, and the Texas Coordinating Board for Higher Education.

Her special interests are mainly innovative methods of teaching science. Within the Chemistry Department at UT-Arlington, she has developed a series of courses in forensic chemistry, worked in the development of a series of short courses in chemistry for non-science majors, and developed a graduate course for science teachers.

"My association with The Texas Academy of Science has been interesting, long, and highly treasured. My first encounter occurred in the spring of 1968 when we accompanied our eldest daughter, Linda, who was presenting a paper at the Junior Academy. The meeting was held at Lamar University in Beaumont. Linda was a junior at Arlington Heights High School, Fort Worth. She was very active in their Science Club. All the members of the club are required to conduct a research project during the school year and report their findings at science fairs and professional competitions such as the Junior Academy. These science club students learn a tremendous amount of science working on these projects; they learn laboratory techniques, use of the library and scientific literature, and writing the reports of their findings. If they present a paper before their peers in the Junior Academy, they develop good speaking skills. Their presentations are quite professional.

"I believe that The Junior Academy of Science is the most important component of The Texas Academy of Science. A strong active Junior Academy contributes to the development of future scientists and engineers; it stimulates scientific curiosity in our young people and encourages them to face the challenges of the future. In my work with the Academy, I have strongly supported The Junior Academy. The Junior Academy in Texas has been very active and has sent many outstanding students to national competitions.

"The Academy meetings provide an excellent environment for the exchange of ideas. Since most of the scientific disciplines have strong national organizations, some people do not see the importance of a State Academy of Science. I believe its existence is essential; it is the umbrella that covers all the sciences and provides a forum for mutual and overlapping concerns to be discussed. Too many scientists have tunnel-vision and exist only in their highly specialized areas.

"I was elected a director about 1976. During this time, the atmosphere was one of financial survival of the Academy. There were strong hopes and dreams of progress, which always seemed unreachable. During my year as President I worked diligently to strengthen the Board of Science Education of the Academy. The Texas Academy of Science needed some strong accomplishments to increase its prestige and public image. I had attended several national meetings of the Academies of Science of the other states to learn what they were doing. Many of the Academies were sponsoring books unique to the natural science or natural history of their states. At this time the nation was in the midst of the 'energy crisis.' Therefore it seemed appropriate to publish a book on 'Texas Lignite.' I worked diligently on this project, which folded due to the lack of the necessary funds.

"During my activities with the Academy I have travelled throughout Texas and discovered the tremendous potential of this great State of Texas. I will continue to work enthusiastically for The Texas Academy of Science and perhaps in a few years I will listen to one of my grandchildren present a paper to the Junior Academy of Science!"

Elray S. Nixon, biologist, TAS President 1982, Born 5 February, 1931, Escalante, Utah. B.S. and M.S. Brigham Young University, 1957 and 1961; Ph.D. The University of Texas at Austin, 1963. Teaching Assistant, Brigham Young University, 1958-1959; Research and Teaching Assistant, The University of Texas at Austin, 1961-1963; Assistant Professor of Biology, Chadron State College, 1963-1965; Assistant Professor, Associate Professor, and Professor, Stephen F. Austin State University, 1965 to the present.

He has served as consultant in botany-plant ecology and plant taxonomy to the United States Army Corps of Engineers, Fort Worth—Trinity River Project; Sabine River Authority of Texas, Orange, Texas—Upper Sabine River Project; Bovay Engineers, Inc., Houston, Texas; Burns and McDonald, Kansas City, Missouri; U.S. Fish and Wildlife Service, Albuquerque, New Mexico; and others. He is listed among the Outstanding Educators of America, Who's Who in Frontiers of Science and Technology, Who's Who in Texas as an illustrious biographee. He served as President of the Texas Organization for Endangered Species, is a member of the Texas Plant Recovery Team, endangered and threatened species, by the U.S. Fish and Wildlife Service, and was selected as Regents Professor for Research for the 1986-1987 academic year in recognition of contributions to Stephen F. Austin State University. These among other honors.

He has collected plants and studied plant communities in eastern Texas since 1966. As a part of his work as a field botanist, Dr. Nixon has developed the Stephen F. Austin State University herbarium into a respectable regional herbarium with more than 65,000 specimens. His research has resulted in the publication of 49 articles and books. His comments on his service to the Academy follow.

"It was a privilege for me to serve in the Texas Academy of Science. It is the *one* organization that promotes scientific excellence in the high schools, colleges, universities and other agencies. As a result, it provides a great service to the State of Texas.

FIGURE 28. Elray S. Nixon, The Texas Academy of Science President, 1982.

"While I was President of the Academy during the 1982-83 years, the Academy was experiencing financial stress. The officers and board members felt that a cutback in operating expenses was vital. The general concensus was that the journal operation needed to be housed on a university campus that could absorb some of the expenses involved. Texas A&M University responded to our needs and the journal operation was eventually transferred.

"The operation of the Texas Academy of Science is dependent upon the volunteer service of its members. Elected members, regardless of their office, work many hours in behalf of the academy. I felt that, upon completion of their terms, all those holding positions in the academy should be awarded plaques or certificates of appreciation recognizing their service. I felt that this expression of gratitude would improve morale and provide fond memories for the recipients.

"As I moved through the ranks of the academy assuming the duties of Vice-President, President Elect, President, and Past President, it became apparent to me that a more equitable distribution of duties was necessary. The President Elect, for example, had few, if any, responsibilities while those serving in other capacities were over burdened. A greater equalization of duties eventually materialized.

"Although the weight of responsibility was at times heavy, I enjoyed serving in the Academy with fellow members. The officers and board members were warm, friendly people dedicated to the growth and success of the Texas Academy of Science."

FIGURE 29. Bernard Theodore Young, The Texas Academy of Science President, 1983.

Bernard Theodore Young, physicist, educator, TAS President 1983. Born Tarentum, Pennsylvania, 13 April 1930. B.S. Secondary Education, Slippery Rock State Teachers College, 1952; M.S. and Ph.D., physics, Texas A&M University, 1961 and 1964; B.S. in computer science, Angelo State University, 1987. Member Sigma Phi Sigma Physics Honor Society, Past President Association Texas Graduate Schools, Past President Texas Section American Association of Physics Teachers, Member of the Conference of Southern Graduate Schools Executive Committee.

He was Electronic Technician of the United States Coast Guard, 1952-1956; Research and Development Engineer for Dow Chemical Company, 1956-1959; part-time Physics Instructor Texas A&M University, 1960-1962; Associate Professor, Professor and Director of Physics Department, Sam Houston State University, 1963-1968; Professor of Physics, Associate Dean of the University, Dean of the Graduate School, and Vice President for Academic Affairs, Angelo State University, 1968 to the present.

He represented the American Association of Physics Teachers on a People to People Goodwill Mission to Russia and China in October, 1983; Served on National Science Foundation Peer Review Panels, the Association of Texas Graduate Schools Committee to study off-campus instruction at the graduate level; served as consultant for the Commission on College Physics, and for the Texas Education Agency.

He has presented nine scientific and education papers at various meetings and symposia. His specialty has been molecular spectroscopy, the ammonia absorption spectra. He is listed in American Men of Science among other biographies.

FIGURE 30. Michael John Carlo, The Texas Academy of Science President, 1984.

Michael John Carlo, chemist, educator, TAS President 1984. Born in Hammond, Indiana, 27 December 1937. B.S. in chemistry and B.A. in mathematics, M.S. and Ph.D. in chemistry, Texas A&M University, 1961, 1962, and 1970. Instructor in chemistry, South Texas College and Texas Southern University, 1962-1963; Instructor, Tarleton State College, 1963-1964; Special Research Fellow, Texas Christian University, 1964-1965; Assistant Professor, Tarleton State College, 1965-1967; Assistant Professor, Angelo State College, 1967-1968; Research Associate, Thermodynamic Research Center, Texas A&M University, 1968-1970; Graduate Faculty and Professor of Chemistry, Angelo State University, 1970 to the present.

Dr. Carlo served as Consulting Toxicologist and continues to serve since 1972, various laboratories, State Program on Drug Abuse, Mental Health/Mental Retardation, and other agencies. Through the years he has served the San Angelo community and the university in many positions and received awards of recognition of his services to the community and the institution.

He is a member of Sigma Xi, AAAS, American Academy of Forensic Sciences, American Association of University Professors, American Chemical Society, and several other scientific societies. He is listed in Who's Who in Frontier Science and Technology, Dictionary of International Biographies, Community Leaders and Noteworthy Americans, Directory of Distinguished Americans, Who's Who in the South and Southwest, 1982-1983.

He has published several laboratory manuals and study guides in general chemistry; authored and coauthored about 20 scientific articles and has given 23 oral presentations to various scientific meetings. His comments on his service to TAS follow.

"I was Managing Editor of The Texas Journal of Science from 1974 through 1982. When I took over the Journal I found approximately 114 manuscripts, some going back five years, which had not been published, two issues of the Journal that had been impounded by the University of Texas Press due to nonpayment, a Journal that was not on publication schedule, and an Academy debt in excess of $15,000. Three years later, the Journal had published all back manuscripts, was on publication schedule, and the Academy debt had been paid (due to three major benefactors of the Academy). All this was due to the leadership of the Academy during that three-year period beginning with President Ben Hannan of Southwest State University and continuing through today. I can vividly remember our monthly meetings in San Marcos, Texas, dealing with financial aspects of the Academy; the many discussions and arguments over what bills to pay that month, and where we, the Board of Directors, were going to find the monies to keep the Academy alive. Since those reconstruction years, the Academy has raised itself above its financial dilemma and today is financially stable. In 1983, I was elected Vice-President of the Academy and designed the Annual Meeting program, a design that still is used today. After my tenure as President, I agreed to run (and was elected) for Treasurer because of my continued concern for the Academy's financial status. Since becoming Treasurer, the Board of Directors receives quarterly financial reports and the Executive Committee receives monthly financial reports including Income Statements, Expenditure Statements, Accounts Receivable, and Year-to-Year Financial Comparison Reports. Therefore, the leadership of the Academy in 1988 knows exactly where it stands financially month by month. We have come a long way in 14 years, but still have to continue to grow and succeed in serving the scientists and science in the State of Texas."

William Jesse Clark, biologist, TAS President 1985. Born in Salt Lake City, Utah, 19 September 1923. B.S. zoology, M.S. fishery management, Ph.D. aquatic biology, 1950, 1956, 1958, Utah State University. U.S. Marine Corps, 1943-1946, and U.S. Air Force, 1951-1952; Assistant Fisheries Biologist, Idaho Fish and Game Department, 1953-1955; Research Assistant, Utah State University, 1955-1957; Assistant Professor, Associate Professor, Professor, Texas A&M University, Department of Biology and Department of Wildlife and Fisheries Sciences, 1957 to present.

Dr. Clark is a member of the Sigma Xi, American Society of Limnology and Oceanography, Ecological Society of America, AAAS, and the International Limnological Society. He is listed in the American Men of Science and other biographies.

He has authored and coauthored 25 articles pertaining to his research in limnology and other aquatic marine science specialties in scientific journals such as The Texas Journal of Science, Southwestern Naturalist, American Geophysical Union, and Hydrobiologia; and 12 technical reports to various agencies and institutes, including the Texas Water Resources Institute.

He has consulted for Houston Power and Light Company, Bechtel Power Corporation, and the U.S. Army Corps of Engineers. His comments as of 25 August 1987 on The Texas Academy of Science and his work with it follow.

"My interest in The Texas Academy of Science began when a group of us decided that we needed an Aquatic Sciences Section. We organized the Section in 1975, and I became Vice Chair of the Section in 1976 and Chair in 1977.

"For a period of time before this, the officers of the Academy had let their hearts over rule their heads, and the Academy had been spending beyond its means. The projects were all worthy of support, but there was no realization that not every good thing can be done. A series of officers and directors worked very hard to turn things around, often meeting and conducting Academy business on a month-to-month basis. Some very generous donations finally enabled us to discharge our debts. I was elected to the Board in 1978, near the end of this process. I believe that the major accomplishment of the Board during my tenure was to establish improved financial reporting and install a realistic budgeting process.

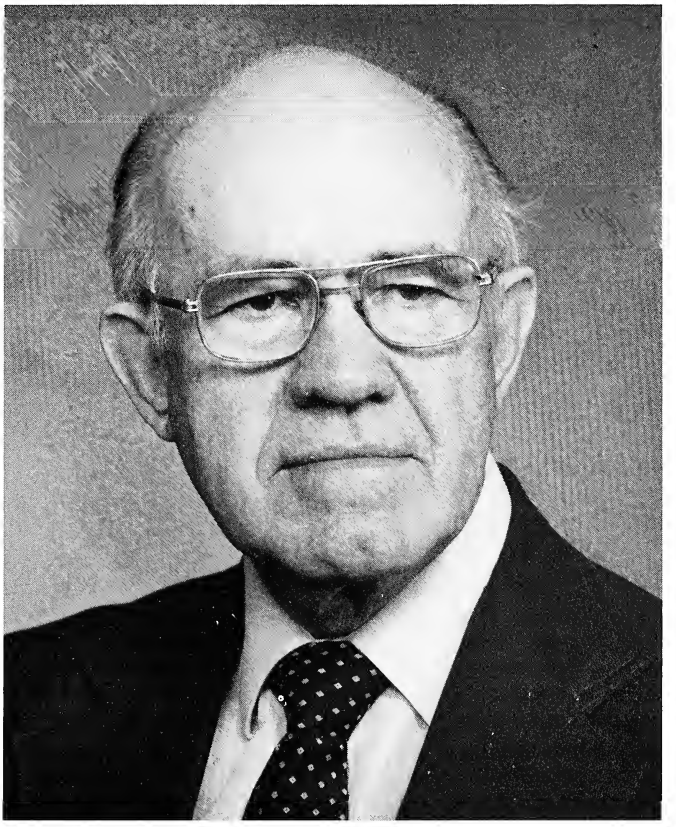

FIGURE 31. William Jesse Clark, The Texas Academy of Science President, 1985.

"I was elected Vice-President in 1983, and progressed through the offices to be President in 1985. During this time we consolidated the financial position of the Academy, expanded the Development Fund, and accumulated a working reserve. We also debated in depth the role of the Academy. It was obvious that the Academy was not serving all of Science in the state, and that we needed to expand our scope. Many sciences have strong regional implications, whereas others do not have a regional implication. The strength of the Academy has historically come from the regional interests. This would undoubtedly remain true, although there could be increased opportunities in all areas for symposia, workshops, and special speakers at the Annual Meetings. In addition, many societies have local branches of their national or international organizations, and it should not be the role of the Academy to userp these groups. We concluded, however, that there were several areas in which the Academy could legitimately function, and through which all scientists and those interested in science and science education could participate:

1. The better state academies function as an independent resource for state agencies and officers to provide independent evaluation of scientifically related problems.

2. There are many problems concerning science and science education that are universal, and the Academy could act as a vehicle for coordination of efforts to address these issues. We proposed that the Academy sponsor a Texas Science Council as such a vehicle.

3. The Academy could sponsor a generally circulated Newsletter covering science and science education.

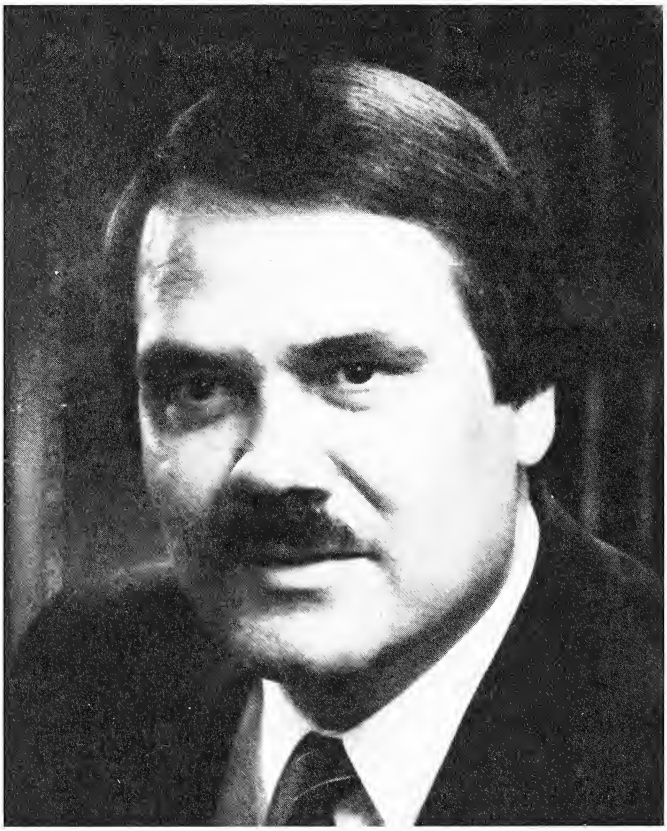

FIGURE 32. Billy Joe Franklin, The Texas Academy of Science President, 1986.

"It was realized that all of these things would take additional funding, and that we could only proceed one step at a time. We had accomplished the first step of financial stability, and were in a position to approach people and organizations for support. The next step was to revise the Constitution and Bylaws to provide a structure within which our goals could be accomplished. When I left office as President this revision had been accomplished. The new Constitution called for separation of the offices of Treasurer and Executive Secretary, and I accepted appointment as Executive Secretary when I stepped down as President."

Billy Joe Franklin, university president, educator, sociologist, TAS President 1986. Born Honey Grove, Texas, 30 January 1940. B.A., M.A., Ph.D., The University of Texas at Austin, 1965, 1967, 1969; University of Michigan, Survey Research Center, 1967 summer; Institute for Academic Deans and Business Officers, American Council on Education, Phoenix, Arizona, 1976; M B O Goes to College, Center for Management and Technical Programs, University of Colorado, 1977; Institute for Educational Management, Harvard University, 1979. Teaching Fellow, The University of Texas at Austin, 1965-1967; Instructor, Southwest Texas State University, 1967-1968; Assistant Professor, Baylor University, 1968-1969; Assistant Professor, University of Iowa, 1969-1971; Associate Professor, Head, Department of Sociology and Anthropology, Western Carolina University, 1971-1973; Professor of Sociology, Chairman, Department of Sociology, Anthropology and Social Work, Wright University, Dayton, Ohio,

1973-1975; Dean of the School of Liberal Arts, Professor of Sociology, and acting Dean of the Graduate School, Southwest Texas State University, 1975-1977; Vice President for Academic Affairs and Professor of Sociology, Stephen F. Austin State University, 1977-1981; President, Texas A&I University, Kingsville, 1981-1985; President, Lamar University, Beaumont, 1985 to present.

Dr. Franklin is a member of the American Sociological Association and served two years as Chairman of a Task Group on Undergraduate Education, funded by FIPSE. He has served on several committees of the Southwestern and North Central Sociological Associations, including the Executive Committee of the latter. He served as Chairman of the Association of Academic Deans and Vice Presidents of Texas; Board member, Vice President, and President of the Association of Texas Colleges and Universities; member of the Nominating Committee (elected), 1987-1988, and the Policies and Purposes Committee, 1987-present of the American Association of State Colleges and Universities; and Commissioner, 1986-present, and Chairman, 1988-present, Commission on Colleges of the Southern Association of Colleges and Schools. He is a member or officer of several other agencies and associations, including the chairmanship of the Beaumont Chamber of Commerce, 1988-1989.

He is a member of Sigma Xi, the American Association of Higher Education, and the New York Academy of Science. He is the author and coauthor of 33 articles in several journals, including the Journal of Social Psychology, Journal of Health and Social Behavior, and the Proceedings of the the Southwestern Sociological Association.

Dr. Franklin served as Vice-Chairman and Chairman of the Social Sciences Section of The Texas Academy of Science. As a member of the Board of Development he wrote the specifications for the Board and the resultant Endowment Fund stipulated within the 1986 revised Constitution and did much of the work in revising the Constitution. He served on the Board of Directors (1982-84) before being elected Vice-President in 1984.

Lamar Johanson, biologist, chemist, TAS President 1987. Born Kyle, Texas, 31 October 1935. B.S. and M.A. in biology and chemistry, Southwest Texas State College, 1957 and 1958; Ph.D. in plant physiology and biochemistry, Texas A&M University, 1967. Graduate Assistant, Department of Biology, Southwest Texas State College, 1957-1958; Clinical Laboratory Officer, United States Air Force, 1958-1961; Instructor of Biological Sciences, Tarleton State College, 1961-1963; Graduate Assistant in the Department of Plant Sciences, Texas A&M University, 1963-1965; NASA Fellow engaged in coursework and dissertation research, 1965-1967; Associate Professor, Professor and Head, Department of Biological Sciences, Dean, School of Arts and Sciences, Tarleton State University, 1981 to the present.

He has been instrumental in developing ADN Nursing Program, Medical Technology Program, Pre-Professional Program, and Marine Biology Program at Tarleton. He has authored and coauthored seven publications in biochemistry in scientific journals and has presented several papers at scientific meetings, including The Texas Academy of Science Annual Meetings.

Dr. Johanson has been a nominee for the Piper Professor Award, selected a Distinguished AFROTC Student, and Outstanding Biology Student. He is a member of Sigma Xi, AAAS, American Institute of Biological Sciences, American Society of Plant Physiologists, Texas Association of College Teachers, and other scientific societies. He is listed in American Men of Science, Dictionary of International Biography, Who's Who in American Education, and other biographies. He sent me the following comment, together with a copy of the Texas Academy of Science 1987 budget, which shows the progress in financial stability since the 1970s.

"I first attended a meeting of The Texas Academy of Science sometime during the 1950s, whatever year the Academy met at Southern Methodist University. I was an undergraduate student at the time, and Dr. W. E. Norris, Jr., Southwest Texas State University and long time supporter of the Academy, took me to the Texas Academy of Science meeting. My next time to attend the Academy was 1962 when it met in Galveston and I gave a paper on my master's thesis work at Southwest Texas State. Since then, I have missed only a few Texas Academy of

FIGURE 33. Lamar Johanson, The Texas Academy of Science President, 1987.

Science meetings. I chaired sessions in biology at San Angelo (1972), Huntsville (1976), and Lubbock (1979). In 1969, I was elected a Fellow, and I served on The Board of Directors from 1976 to 1979. In 1985, I was elected Vice-President of the Academy. The Texas Academy of Science has been a big part of my life and I look forward to the Annual Meeting each year; even though I am no longer active in research, having been a full-time administrator since 1973 with no time for research.

"It is my belief that The Texas Academy of Science has served the science community of Texas well over the years. In my opinion, its major purpose has been a friendly training ground for our students to present their work. I believe this is the most important function of the Academy. During the past few years the Journal has greatly improved under the management of J. Knox Jones, Jr., and it is rapidly becoming a well known and highly respected publication. The Academy is presently sound, which has not always been the case, and Michael J. Carlo can be thanked for this. We have an excellent Board that is cooperative as well as progressive. The Academy is on the move, and having the privilege to serve as its President (1987-1988) has been a most rewarding experience for me.

"My goal and wish for the Academy is that it will eventually become the spokes organization for all science in the state of Texas; that it will have influence all the way from public school science curriculum to the most sophisticated research in our major universities. This will take money and political connections. Therefore, it is imperative that we form a Board of Development to assist in these matters."

ACKNOWLEDGMENTS

I want to thank the past Presidents of The Texas Academy of Science who responded so generously to my request for vitae, essays about the Academy, and photographs. I want to apologize to those with whom I failed to make contact either by letter or telephone.

Thanks to Michael Carlo for his notice in *The Texas Journal of Science* while Editor, asking readers to send to me any material that might be of help in this project, his continued help and suggestions, and especially for the scrapbooks of Frederick Burt's mother, Lucy Burt; to W. W. (Ike) Newton, consulting geophysicist of Dallas, for the loan of his family book, Larissa, and permission to place a copy of it in the Texas Academy of Science Archives in the Texas A&M University Archival Library; to Gerald Saxon, Oral Historian, the City of Dallas Public Library, for his help in locating many of the *Texas Farm and Ranch* papers and for allowing me to make copies of them though they were about to fall apart; Mike Kingston, Editor of *The Texas Almanac*, for a preprint copy of his "Science in Early Texas," the Dallas Morning News, 9 April 1985, and especially for his sending George B. Ward, Texas State Historical Association Editor, to me with a request for a digest of my history of the Academy for the *Handbook of Texas*, revised, now in press, inspiring me to get busy on this project; to Susan Roosth, Southern Methodist University Science Library, for her cheerful hospitality and search assistance, who steered me to Frances Roppolo, Louisiana State University Reference Librarian, and a copy of Lamb's biographies; to Charles Schultz, Texas A&M University Archivist, who furnished me with several biographies not found elsewhere; to William J. Clark of Texas A&M University and 1985 TAS President, who suggested the TAS publication of this material, and for his continued encouragement; to Dennis Trombatore, University of Texas at Austin Geology Librarian, who furnished me with copies of out-of-print publications of the earlier Academies and, more important, a copy of Yoakum's history of his Texas Academy of Science published in the 1 December 1886 issue of *Texas Farm and Ranch*; to Katherine Pettit, Head of the Department of Archives and Special Collections, Trinity University, San Antonio, for copies of biographical material on Yoakum; to the late Tom Williams and Bob Slaughter of Shuler Museum of Paleontology, Southern Methodist University, for their essay on Professor Samuel Wood Geiser, who died in New York in 1984, and whose publications on the early Texas Academies and early scientists in Texas furnished the basis for this work; to Lamar Johanson, 1987 TAS President, who furnished me with up-to-date news of the Academy and the latest financial report to substantiate our claims that the Academy now is stabilized financially; and to J. Knox Jones, Jr., Editor of *The Texas Journal of Science*, the Museum, Texas Tech University, and his student associates, for assuming the tedious job of editing this material, getting it printed and distributed to our members, and particularly for his enduring patience.

29 September 1988 Ethel Ward-McLemore

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American Men and Women of Science; *Who's Who in America*; *Who's Who in the South and Southwest*; *Who Was Who in America*; *Who's Who in Engineering*; *Leaders in American Science*; and the *Dictionary of International Biography, 1977-1985*. Some of these are cited at the appropriate place(s) in text.

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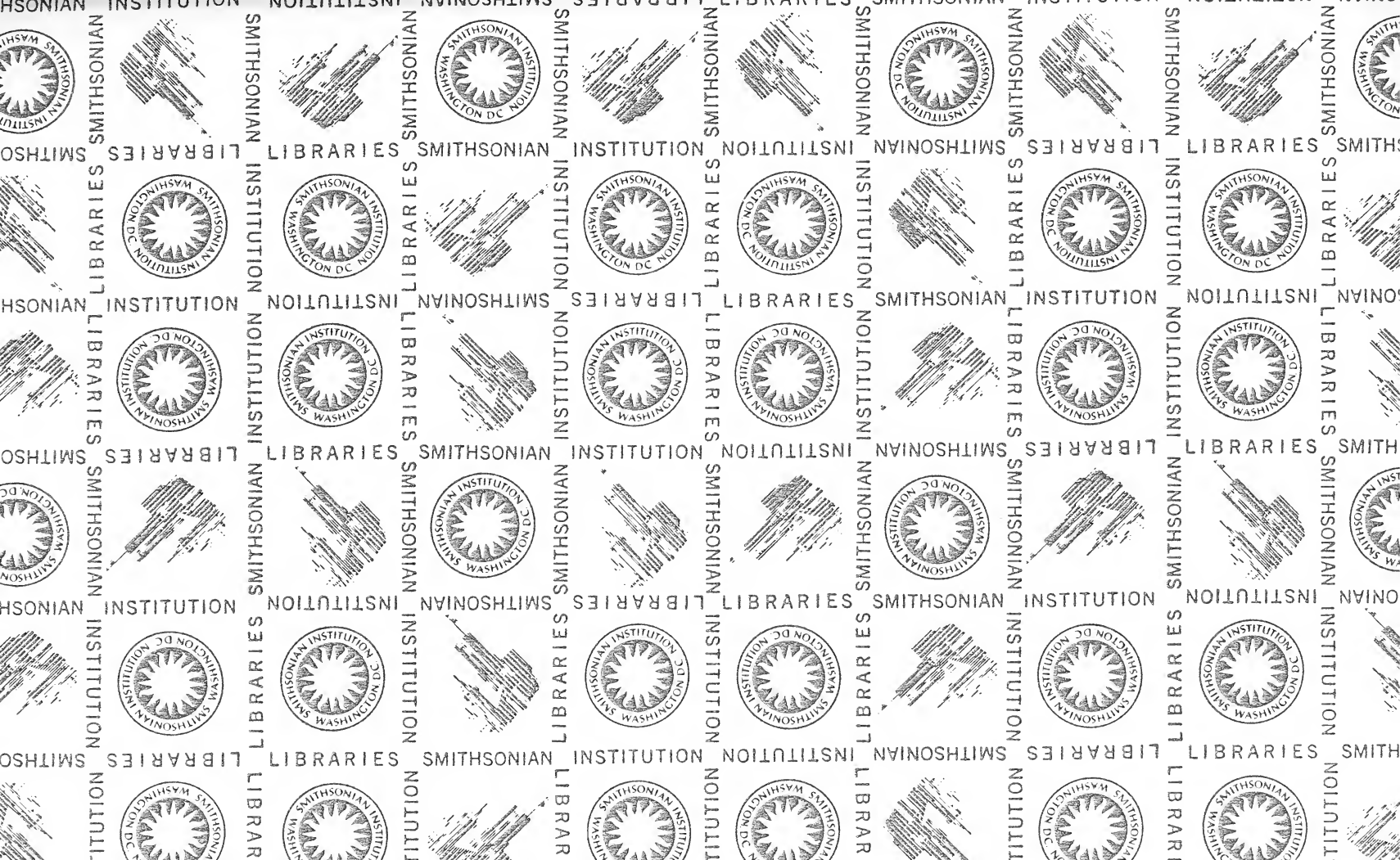
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