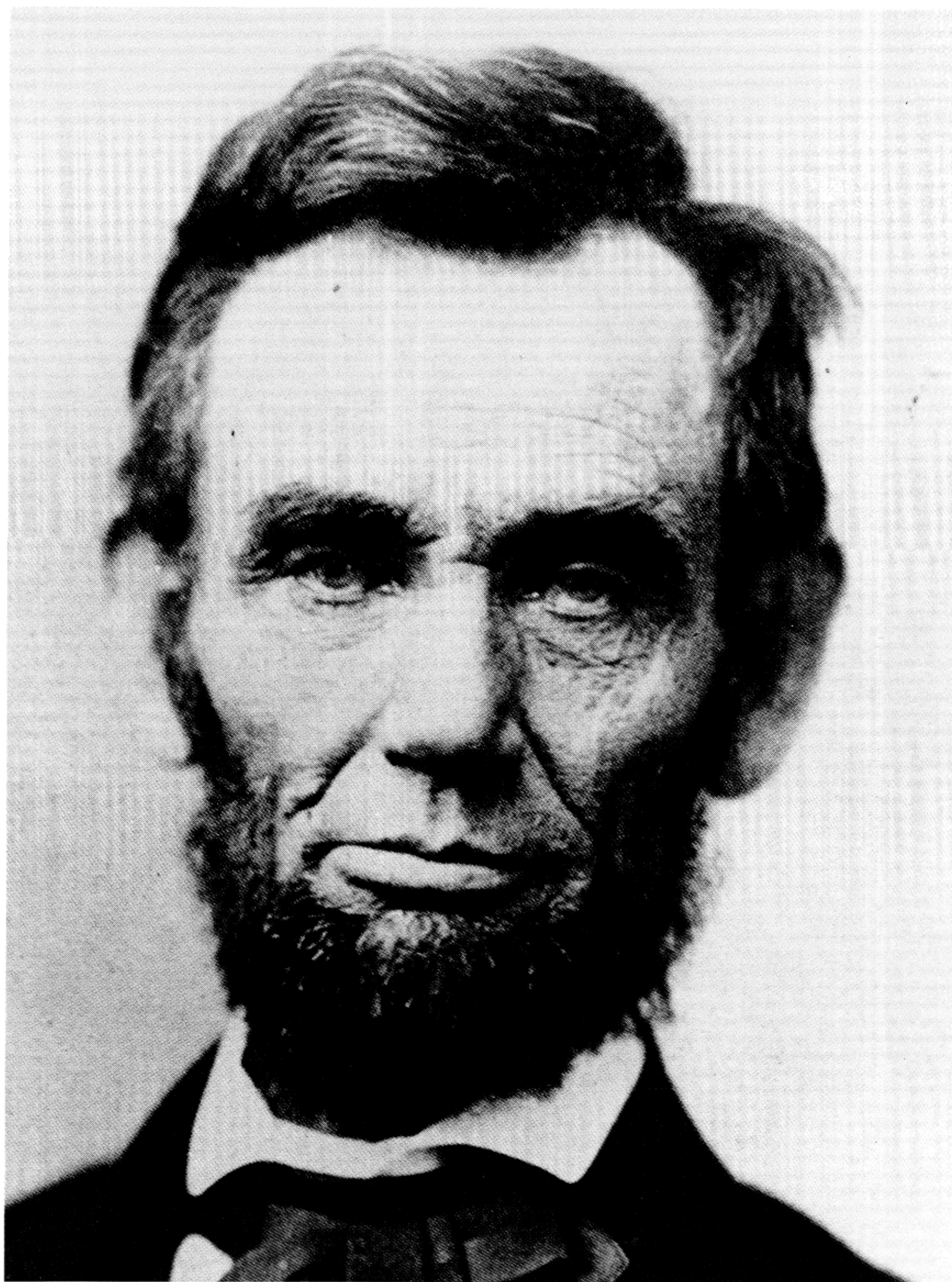


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Roots and Wings

Esther Eggertsen Peterson

I am deeply honored to be invited to give the Alice Louise Reynolds inaugural lecture and asked to look at my life in light of hers. Since I went “back East” nearly a lifetime ago as a member of the class of 1927, I have come home to Utah many times. But today is perhaps the most joyous homecoming of all.

Alice Louise Reynolds made such a profound contribution to this place she so deeply loved that I feel intimidated by her example and inadequate to my assigned task today. And yet, in some ways it is natural to talk about our lives in the same breath, for though she was born in 1873 and I was born in 1906, our roots are here in Utah and here at this splendid university, which helped shape our lives in so many important ways. So to me this is even more than a very special speaking engagement. This is my homecoming. This is where I was born and grew up and went to elementary school and high school and college.

In the sixty-one years since I left Brigham Young University, I have lived and put down roots in many places: Boston, New York, a farm in rural Vermont, Stockholm, Brussels, and, for most of the past half-century, in the Washington, D.C., area. I have always tried to be part of the community, wherever I chanced to live. But even to this day, I find myself unconsciously telling friends that I have just phoned “home” or that I am going “home,” when I mean Utah, and particularly Provo. As for BYU, here on this campus is where my life as a woman and as a worker began. Those were years shaped, in many, many ways by the values Alice Louise Reynolds believed in.

I found my theme for today, “Roots and Wings,” in a recent issue of *BYU Today*.¹ What better words to describe the power of this institution? Alice Reynolds, my brothers and sisters and I, and oh, so many others had our intellectual roots here and took wing on

Esther Eggertsen Peterson has spent a distinguished career working with labor, consumer, and women's issues, including assignments as assistant secretary of labor for labor standards, 1961-69; executive vice-chair of the President's Commission on the Status of Women, 1961-63; and special assistant to the President for consumer affairs, 1964-67 and 1977-80. She was awarded the Presidential Medal of Freedom in 1981. This essay was originally presented as the inaugural Alice Louise Reynolds Lecture at Brigham Young University on 22 September 1988.

the strength of a BYU education. What a difference it made in our lives! Since this is the inaugural lecture in the series honoring Professor Reynolds, it is only right to tell you something of her life and background and the forces and situations that helped to mold her. And I want to reflect on them in relation to my life and the lives of others in my time. Too few of us are aware of what women like Alice Louise Reynolds and her predecessors have contributed to the opportunities I and other women have enjoyed in pursuing careers in public service and public life.

Alice Reynolds's tangible achievements in education and in women's rights would have been impressive in any age, but they were particularly remarkable in her day, when few women in the entire country graduated from college, and even fewer became full professors, as she did. She entered a man's world at a time when women were rarely accepted in the workplace. Young women are sometimes kind enough to tell me that I'm an inspiration to their generation, but I tell them what I must tell you, that in the area of women's advancement my generation is only a follower of pioneers like Alice Reynolds and many before her.

People who knew her spoke about the countless kind words and deeds that she lavished upon her students and friends, about the fact that she felt no need to criticize people and put them down. "Let Us Oft Speak Kind Words to Each Other. . . ." ² And yet, at the same time, she sought to challenge her students rigorously because she believed that this was the only way to help them develop their full potential. No wonder she was so greatly loved! She cared about them and they knew it. Indeed, when you think that nearly five thousand students took courses with Professor Reynolds, it does not seem farfetched to picture her as a kind of mother to us all.

Professor Reynolds created the first English literature curriculum at BYU, introducing students to great literature—Chaucer, Browning, the history of the novel, and modern drama, among others. Perhaps even more importantly, she built the BYU library—not the bricks and mortar, but the priceless collection of knowledge within its walls. And she sent her students out into the world so charged by her example that they formed Alice Louise Reynolds clubs, even in New York, sharing and spreading her love of literature and education and at the same time gathering books and material for the library.

Alice Reynolds's whole life was one of loving service to the people around her, to her university, her church, and her country. We know she felt strongly about our debts to others. Let us not forget our debts. After her death, a poem was found in her diary that clearly expressed this sense of obligation:

Lord, help me live from day to day
In such a self-forgetful way
That even when I kneel to pray
My prayer may be of others.

You will probably know her story, but perhaps, like me, some of you would like to know more about her. In reading Alice Reynolds's autobiography, her writings, and what I could find that has been written about her, I came away wishing we could learn more about the events she lived through and to hear more of her keen observations of the situations she must have encountered in her efforts to effect change.

I suspect that her life—examined in its context and explored in its implications—has much more to tell us. Perhaps someone in this great institution will take up such a project one day, for I don't think the writings so far have touched the depths of what she must have learned.

Until the day that such a study is made of Professor Reynolds's life, I must be content to read between the lines as well as to follow some of the threads that wound through both our lives: the vibrant community and family life, the deep values and great dreams that many of us shared in the early years of this century. In this beautiful state with its peaks and valleys, the inspiration of The Church of Jesus Christ of Latter-day Saints, and the triumphs of pioneers provided "growing ground" for all of us. And what a fertile growing ground it was.

It could not have been easy to do all that she did, but on the other hand, there was in a number of ways a greater willingness in those days to accept women in the world outside the home than there was in later decades. After all, Brigham Young had taught that the woman's place was in the counting house as well as the family house. And don't forget that women's rights and the right to vote were enshrined in the Utah Constitution at the time of statehood in 1896. I wonder how those pioneer women who had worked for that would have felt two generations later to find their state reluctant to step forward in answer to a new call for women's equality.

Mormon women had begun to take part in political activities early in 1870. Although they could not hold office, they actively participated through discussions in meetings and writing about women's disadvantages. They did this through publications such as the *Women's Exponent*, from which *Exponent II* takes its inspiration.³ They sponsored meetings through the Relief Society⁴ and the Utah Suffrage Association and they sang songs of their rights—including one to the tune of the Mormon hymn "Hope of Israel":

Freedom's daughter, rouse from slumber:
See, the curtains are withdrawn,
Which so long thy mind have shrouded,
Lo! thy day begins to dawn.
Woman, 'rise! thy penance o'er.
Sit thou in the dust no more:
Seize the scepter: hold the van.
Equal with thy brother, man.

Surely, Alice Reynolds benefitted from the climate that this early activity permitted.

In light of the tolerance of that period, it was not surprising to find that Alice Reynolds, a woman of the university, was also a woman of the political world outside, that she once walked several miles to deliver tickets to a speech by William Jennings Bryan so that some missionaries could hear him. She was active in the Utah suffrage movement, and in 1920 she seconded the nomination of William MacAdoo at the Democratic Convention.⁵ She was an example of the best kind of American, one who took her citizenship rights seriously.

Alice Reynolds enjoyed the loving care of a large, supportive family, as I have. Her nickname in the neighborhood—"Princess Alice"—suggests that she was somewhat pampered compared to other children of her day, and if this is so it seems to have contributed to the self-confidence and lack of concern with petty matters upon which many of her contemporaries remarked.

It was unusual for children to attend preschool in those days, but Alice's father, George Reynolds,⁶ saw to it that she was sent to school when she was only four years old, and at thirteen she entered Brigham Young Academy. George Reynolds recognized his daughter's intellectual gifts early and took pains to guide her education, of which travel was an important part. You might say that he always had his hand on her shoulder.

As sheltered as she was, Alice also experienced suffering as a child. She later referred to her father's two-year imprisonment for polygamy⁷ as a very painful time. And her mother's death when Alice was twelve was a serious blow. It seems safe to assume that the nurturing she enjoyed seems to have contributed to her formidable strength and self-assurance, and that this, along with her experience of suffering, enabled her to empathize with others.

Between the lines of Professor Reynolds's writings is a lively, impish sense of humor. In one of the many articles she wrote for the *Relief Society Magazine*, of which she was editor for some time, she recounted a story about a well-known feminist, Lucy Stone (later Lucy Stone Blackwell). Lucy Stone was a graduate of Oberlin

College. She wrote a paper her senior year that so excited the faculty that they decided to have it read at commencement. However, they felt they couldn't allow her to read it because she was a woman. Lucy, reacting to the illogic of this situation, refused to allow her paper to be read.

Years later, Oberlin invited Miss Stone to give a commencement address, and at some point during the festivities, she was asked how women's struggle for emancipation was faring. "It is certainly making progress," Miss Stone replied, "for when I first began campaigning for women's rights it was customary to throw rotten eggs at me; now at least the eggs that are hurled are fresh eggs."⁸

The common threads in Professor Reynolds's life and in my life begin in the early years at home. They say that as you get older your memories of childhood become more vivid, and in my experience this is so true. Alice Reynolds spoke of the importance of family discussions in her home; they were also terribly important in mine. How clearly I remember our family sitting around the dining room table and talking and talking and talking. Though I was the youngest girl, my brother Luther insisted that I be included in the discussions, which ranged from the teaching of evolution to the League of Nations. I even remember U.S. Senator Reed Smoot⁹ sitting at our dining room table and assuring us that the great wall of import tariffs that the Smoot-Hawley Tariff Act was raising around our shores would guarantee "insular prosperity" to America. Unfortunately, it became one of the factors that led to a world economic crash.

Looking back, it is easy to see how important these family discussions were in encouraging us to think and to ask questions. In our family, as in Professor Reynolds's family, great store was placed in development of one's gifts, especially one's God-given intelligence. Somehow I think this was easier to do before we had television. The presence of boarders in our home—even Ernie Wilkinson¹⁰ boarded with us for a time—meant that we were exposed not only to stimulating conversation, but also to diversity—to different people with different opinions. Do children experience this today, talking face to face with people with points of view different from theirs? This experience prepared us to enjoy a broad variety of people of many races, creeds, and cultures later on. It would be impossible to overestimate its importance to me. It is obvious that Alice Reynolds, who also loved to travel, cherished diversity as well.

What were the other values? The work ethic, of course was one. Like Alice Reynolds, I never cared much for household

chores, important as they are. But I loved working in the fields and helping my father with the livestock, and I look back on memories of doing those “chores” with great fondness—even helping to clean the manure out of the cow barn.

Combined with the work ethic was a sense that “you can do” whatever needs to be done, a conviction that we inherited from our ancestors who had crossed the Plains. We were all raised on Brigham Young’s idea that we don’t have to go to California to get gold—we’re going to make this land right here beautiful. And, indeed, the extraordinary achievement of irrigating the desert taught us that anything was possible.

Responsibility for others was also high on the list of values that shaped our lives. This was driven home to me when my mother became matron of the poorhouse after my father became ill. If you remember, we had no pensions or Social Security in those days. My brother Mark and I went to the poorhouse with mother and helped her clean. We placed the legs of the beds in cans full of kerosene to kill the bedbugs, and we helped to scrub everything, including the bathrooms. It did not occur to us that we should be paid for this—we were simply fulfilling part of our obligation to people less fortunate than we were. I believe that in our hearts our Sunday singing came back, “Have you done any good in the world today? Have I helped anyone in need?”¹¹

The importance of group effort was another given in those days. It was taken for granted that we needed each other, and the idea of going it alone was unheard of. The assumption that you must win support from others and give credit to them has stood me in good stead all these years, just as it did Alice Reynolds, who freely shared the joys of her accomplishments.

Possibly, the anthropologists would say that our religious sense of interdependency was a very practical reason for the notion that we had to be considerate of each other, and this was drummed into us as well. However, I must confess to occasional lapses in sisterly devotion. For instance, we had a rule in my family (there were four girls) that the last one in at night had to mix the bread for the next day, so I figured out a way to stay out as long as possible without being last. I tried to be the next to last one. It was a way of having my cake and eating it, too, I suppose.

BYU in those days seemed to carry forward all of the values that we had been taught at home and in church. So it was natural to accept them as a foundation on which to build, and this was furthered by many fine teachers.

I was not in one of Alice Reynolds’s classes, but in a broad sense I was certainly one of her students. And to paraphrase a public

figure much in the news these days, had I known sixty-some years ago that I would be standing here at this time, I most certainly would have signed up for one of her courses! Nevertheless, through my sisters Algie, Thelma, and Anna Marie I knew about Professor Reynolds and felt her influence on this campus. And we were delighted by the stories we all used to hear about her professorial absentmindedness, her teakettle purse, and the time she crawled through the classroom window.

Even though I did not study with Professor Reynolds, I was influenced by her and was nourished by other outstanding teachers. William J. Snow in political science opened up the world of government for me. He pressed us hard to think. Wilford Poulson in psychology had me read many works on the psychology of religion, and Professor Hugh Woodruff imbued me with the philosophy and history of the many different religions so vital to understanding diverse cultures throughout the world. Walter Cottam and Vasco Tanner in botany and zoology, Carl Eyring in physics, and John C. Swenson in sociology helped prepare me for the work I did later in the sweatshops of New York and Boston and for my teaching at Bryn Mawr Summer School for Women Workers. George Hanson, the geology teacher, taught us how long it took to build the great mountains—it took millions of years—and he said to the students, “You must be patient.” But his final words were, “Don’t be too patient.”

Julia B. Jensen’s impact was tremendous. I studied Robert Browning with her. I had already had the good fortune of studying English literature in high school with Alice Ludlow, who later became Mrs. Ernie Wilkinson. It was she who reinforced my love of reading. These were some of the people who had their hands on my shoulders, who gently pushed me to think critically, to ask questions, and to take risks, all the while reminding me that they were there to explain, to argue, to guide if needed.

As wonderful as all this was, it would be wrong for me to give the impression that everything was perfect, for, like many young people, I was starting to question accepted behavior even then. As a youngster, I rode from Provo to Salt Lake one day with some of my mother’s college student boarders who had been enlisted as strikebreakers during a railroad strike at the Salt Lake roundhouse. I still vividly remember being escorted through the picket line by police on horseback who made a path for our car by pushing back the strikers and their families. At one point our car stopped in the midst of the crowd, and a thin woman with two small children caught my eye. “Why are you doing this to us?” she asked. I had no answer.

So even as a child I began to ask questions, and it was often difficult to get answers. In fact, I was sometimes criticized for asking “too many” questions. And later this was difficult to square with what I had been taught in church and in the classroom. Though it was not the main factor in my leaving Utah, if I am to be honest with you, then I have to say it was a factor, along with matters of the heart. But then I was one of many BYU graduates who headed East at that time. There was not enough room for us in Utah’s agrarian economy. Henry Stark, Briant Decker, Walter Cottam, Henry Eyring, Hal Bently, and Nils Anderson were also among that group.

I needed explanations. Why were we comfortable while others were hungry? Even Professor Jenson, when she taught Browning’s “Pippa Passes,” never explained why the little girl was allowed out of the mill for only one day a year. But I do remember Pippa’s happiness: “God’s in his heaven, all’s right with the world.” My brother Luther had written from his mission in England about the dehumanizing conditions then prevailing in British factories. But many people did not want to hear about it. And what’s more, it was suggested that people who talked about such things were probably just “troublemakers.” Imagine my surprise when I discovered that my future husband, who was raised in North Dakota, knew more about the copper miners’ strike and the lives of industrial workers in Utah than I did. We did live a “protected” life.

Well, times have changed, haven’t they? It is encouraging to think that concerns and attitudes that once seemed threatening are now widely accepted.

In a sense, though I have lived on the East Coast and in Europe all these years and traveled to all the continents, I have never left Utah. And when I contemplate my good fortune to have participated for nearly six decades in some of the great changes of this century—in affirming the rights of workers, of women, of blacks, and consumers—I have always come back to my roots and to the place that gave me wings.

When I started out, it was no longer remarkable for a woman to graduate from college. The right to vote was something we had already inherited. The right to enter the work force was being accepted more and more. This was already quite a change from attitudes in Alice Reynolds’s youth.

One of the things I would like to know about her is how she accomplished so much at a time when most women were expected to stay home. Remaining unmarried was probably a factor in Professor Reynolds’s career; of course, it was more acceptable for single women to work in those days than it was for married women. Also, I think, the time was ripening for women’s abilities and

energies to be brought into service—this simply began to make sense to many people, particularly during World War I.

Lastly, we must never forget that supporting hand on the shoulder—in her case, the hand of her father and other relatives and friends. In mine, it was also the hand of my father, and my brother Luther, and my brother-in-law George Ballif, my sister Algie, and, of course, mainly my husband, Oliver, who was so comfortable in his own sense of self-worth that any honors which came to me were celebrated with me.

In Professor Reynolds's success, I think we must assume that the way she went about achieving her goals was crucial. In my own experience, you can move mountains if you keep certain principles in mind—guidelines, if you will, for how we ought to treat other human beings. It is, for instance, terribly important to look at the other person's situation and try to understand that individual's point of view. This means, in a sense, standing in the shoes of the people you're trying to understand. It also means approaching opponents respectfully and making a serious effort to understand the reasons for their position. It seems to me that this is more important than ever now, for our society is at a level of such complexity that the "right" answer is seldom easy or obvious. "Avoid simple answers," George Hanson taught us, "for they are usually unreliable." And to find reliable answers to the thorny problems we face today, we need all the help we can get. We need each other. We need to hear all voices and try to understand all points of view.

Alice Reynolds would undoubtedly be very proud to see how far women have come since her day. I am very gratified to have been a part of that advance through the achievements of President John F. Kennedy's Commission on the Status of Women. In 1963 it was almost as controversial and embattled a set of principles as Civil Rights was. In Utah, I might add, advocacy of equality of opportunity was often regarded as an attack on the structure of family life and tradition.

At the same time, I am aware that our upbringing in Utah gave us convictions, and I suppose it was these convictions, along with our supportive friends and families, that gave us the courage to speak out. Though Professor Reynolds was a model of gentleness, that did not stop her from doing what she believed in. She was aware of the great currents of her time. She discussed, she led, and she spoke up for her beliefs, fearlessly. As we already know, she was a supporter of early legislation for women, and I'm confident from all we know about her that she would be in the forefront on the big issues that women are facing today: day care for children,

shared responsibility in the home, poverty in fatherless homes, and implementation of the principle of equality with tools such as “comparable worth.” There are so many issues we are working on now where the wisdom she demonstrated years ago continues to be needed.

Now the time has come—and I think Alice Reynolds would agree—to talk less about women’s needs and men’s needs and more about human needs. This is not to say that the needs of women have been met. But the commitment now exists and much more understanding is there. They show up in recent surveys among young people—even those with fundamentally conservative views. And there are tools to ensure that these things will become reality. So now it is mainly a question of working out the details. And while I do not wish to minimize the importance of details—which can make or break any dream—I think it is clear that even more pressing business is at hand.

The strength to be different was obviously one of Professor Reynolds’s qualities, and she did not hesitate to speak out in difficult situations. Most people here have probably read her spirited defense of the Church at the National Suffrage Convention in 1904.¹²

I cannot honestly say that I felt strong or impervious during the times in my life when I have been attacked by critics. But at those times, and there have been many, when people on opposite sides of an issue said I was wrong, I always thought of my dear husband’s advice. “Esther,” he said, “when you’re being attacked from both sides, you are better able to stand upright.” This, too, fit in with what ran so deep through my own childhood: “Do what is right; let the consequence follow.”¹³ And it is not always easy to know what is right.

Being under fire from both extremes has been a fairly frequent experience during my years of working for consumer rights. And quite honestly, my background in Utah—knowing what “a good loaf of bread” was and believing that you can do what is right and still make a profit without lying or cheating—gave me strength and credibility. Happily I was even able to “sell” this concept of consumerism to a multi-billion-dollar food chain in the Washington area in the eight years between my White House assignments. Together we proved you could make a profit by treating consumers fairly and respecting their intelligence.

Now, in my old age, my thoughts turn to my grandchildren and to everyone’s grandchildren. It is for them that we must take on the big challenges before us: to rescue the environment, to save our

planet, and to broaden the base of opportunity for education and free choice around the world.

Imagine the world we live in as a village of one thousand. In this condensed world, a reflection of our larger world, sixty of the one thousand villagers would own half of the total wealth. More than five hundred of the one thousand would be living in slums and would be hungry. And seven hundred of the one thousand would be illiterate. One more thing about that imaginary village: seven hundred of the one thousand are nonwhite, so it might be a good idea for all of us to rethink who is the minority and who is the majority in this world.

The world is as close as the airwaves that now reach everywhere, even to the remotest villages in Africa and Asia. People, especially young people, are walking around with those little earphones, and they are not only listening to Michael Jackson, they are also hearing the news of the world and becoming aware of the enormous gaps that divide us and them in our world village.

In reading *A Lighter of Lamps*,¹⁴ I was impressed by a passage that also impressed Professor Reynolds, who, not long before her death copied it into her journal from an article by Kathleen Norris, "What Every Woman Almost Knows."¹⁵ It is a passionate description of the effect of subjugation on women. But in reading it, I think not only of women, but of human beings in general, human beings everywhere.

The author wrote of the "accumulating weight of injustices down through the ages. To be enslaved, ignored, punished, unrewarded, scorned, belittled even for a few days has a fearful effect even on a child. Thus treated, it may never rise to normal free development again."¹⁶

The problems facing us in the world are daunting, but they are soluble. As Brigham Young said, we can do it. And it seems to me that our heritage as the children and grandchildren and great-grandchildren of brave, resolute, and indomitable pioneers is very valuable and relevant in facing the great demands of today and tomorrow.

Forty-some years ago it was considered almost radical for a defeated Republican presidential candidate to talk about "One World" as Wendell Willkie did, to talk about how interdependent we are and how we cannot survive without working together. But sixty, eighty, a hundred years ago in Utah such notions were held by nearly everyone. To be sure, it was a smaller world, and yet those old values are more important than ever today.

Surely, each of us has something to contribute toward widening the freedoms and opportunities for people in developing

countries beyond providing the shining example of a free and prosperous America. Many organizations and individuals are doing just that. A great deal is being done to widen opportunities. Right now, I am working hard on a little piece of this idea by representing the International Organization of Consumers Unions at the United Nations, where we are trying, among other things, to prevent the dumping of hazardous goods and materials on the markets of unsuspecting countries. We are also attempting to extend to other people aspects of enlightened free enterprise that we now take for granted in the United States—honest, informative food labeling and dating and safe drugs and pesticides.

Consumer rights and environmental rights are widely accepted elements of the free enterprise system now, although I am sorry to have to tell you that not everyone in power in this country seems to agree. Maybe it's a hard point to grasp when the well-being of business is seen as being more important than the well-being of people. In the real world they are often intertwined.

President Carter worked with great dedication to get American business to agree to an executive order prohibiting the sale of hazardous products overseas without the full knowledge and agreement of the governments involved. The order was signed and put into effect. Unfortunately, the Reagan administration lifted the order three weeks after its inauguration in 1981—a move that created considerable disappointment among countries that had looked to us for leadership in this area.

These countries then turned to the United Nations for help in making available a full list of all products banned or severely restricted, not only in the United States, but in any other developed nation. But when it was time to reach consensus on publishing the list at the United Nations, the only country that withheld its support for a prolonged period was the United States.

The same thing happened when we tried to adopt the same general international consumer protection guidelines that are mandatory in our own marketplace. There was no compulsion in the U.N. guidelines—only guidance and technical assistance. Yet throughout the debate at the U.N., the United States refused to agree to share the tools to assure clean water, safe pharmaceuticals, safe meat, and so on—standards that we in the U.S. take for granted: the right to be safe, to be informed, to be heard, and to have choice—the consumer rights that President Kennedy enumerated as a Consumer Bill of Rights twenty-six years ago, and that I have devoted countless time on seeing that they are implemented. These things exist only in a truly competitive marketplace. Maybe the bureaucrats and politicians would have been a little more

open-minded on this U.N. issue if they had gotten out in the world more and walked through the remote villages. If they had, they might have seen and felt the great respect, almost reverence, in which our country is held by most people in the world, not for our great wealth, which is, of course, envied, but for our democratic ideals and our respect for the individual and for humanity.

In my going around and working, the one name that opens doors for me is the name of Eleanor Roosevelt. These efforts perhaps represent small steps, but one thing I've learned—and I feel certain that Alice Louise Reynolds knew it too—is that small steps can eventually get you where you want to go. In fact, very often they're the only way to get there. Maybe this is part of the reason I keep coming back to a poem that has meant much to me over the years, "Stubborn Ounces":

You say the little efforts that I make
will do no good: they never will prevail
to tip the hovering scale
where Justice hangs in balance.

I don't think
I ever thought they would.
But I am prejudiced beyond debate
in favor of my right to choose which side
shall feel the stubborn ounces of my weight.¹⁷

On this campus, and in this world, we are the beneficiaries of many people like Alice Louise Reynolds; of people with stubborn prejudice in favor of everyone's right to learn and to grow. What a great legacy it is, and how grateful I am to you and to this university for giving me an assignment to prepare for this lecture, which enabled me to rediscover my roots, and wings, in her life.

NOTES

¹Roger Porter, "Tradition and Change: The Search for Roots and Wings," *BYU Today* 42 (January 1988): 26-33.

²Joseph L. Townsend, "Let Us Oft Speak Kind Words to Each Other," *Hymns of The Church of Jesus Christ of Latter-day Saints* (Salt Lake City: Church of Jesus Christ of Latter-day Saints, 1985), no. 232.

³The *Women's Exponent* first appeared in 1872 under the editorial guidance of L. L. Green. Privately published, it flourished for over forty years under various editors, most notably Emmeline B. Wells. The journal ceased publication in 1914. It was resurrected sixty years later in Boston by Claudia Bushman as *Exponent II*. Again privately sponsored, the magazine is currently edited by Susan Paxman and published in Arlington, Massachusetts.

⁴The Relief Society is a Church-sponsored auxiliary for women, organized in Nauvoo, Illinois, 15 March 1842, under the direction of Joseph Smith, Jr., at the suggestion of his wife, Emma, and other prominent women of the town.

⁵The convention was held in San Francisco, California, 28 June-5 July 1920. Although MacAdoo was nominated for consideration as the party's presidential candidate that year, the final vote put James M. Cox on the ticket in the presidential race and Franklin D. Roosevelt as vice president. The Republicans won that election, sending Warren G. Harding to the White House.

⁶George Reynolds (1842-1909) was a member of the First Seven Presidents of the Seventy (1890-1909) and served as a personal secretary to Brigham Young.

⁷George Reynolds's conviction was upheld by the Supreme Court on 6 January 1879. He was sentenced by the Utah Supreme Court to serve two years in a federal prison. He left for Lincoln, Nebraska, on 18 June 1879. He stayed there for twenty-five days and was returned to serve his time at the Utah Territorial Penitentiary in Sugar House. He was released 20 January 1881, after serving eighteen months.

⁸Alice Louise Reynolds, "Women and Higher Education," *Relief Society Magazine* 10 (October 1923): 492-93.

⁹Reed Smoot (1862-1941), a member of the Quorum of the Twelve Apostles (1900-1941), served in the United States Senate from 1903 through 1933.

¹⁰Ernest L. Wilkinson (1899-1978), a prominent attorney, served as president of BYU from 1951 to 1971.

¹¹Will L. Thompson, "Have I Done Any Good?" *Hymns*, no. 223.

¹²In 1904 Alice Louise Reynolds attended a meeting of the "General Federation of Clubs" held at St. Louis, Missouri. Here, she defended her beliefs in a three-minute rebuttal to an attack on the Mormons made by Mrs. C. E. Allen, "a vigorous anti-Mormon club woman from Salt Lake City" (see Amy Brown Lyman, *A Lighter of Lamps: The Life Story of Alice Louise Reynolds* [Provo: Alice Louise Reynolds Club, 1947], 50).

¹³"Do What Is Right," *Hymns*, no. 237.

¹⁴Lyman, *Lighter of Lamps*, 238.

¹⁵Kathleen Norris, "What Every Woman Almost Knows," *Reader's Digest* 25 (December 1934): 7-12.

¹⁶*Ibid.*, 7.

¹⁷Bonaro W. Overstreet, *Hands Laid upon the Wind* (New York: Norton, 1955), 15.

Rat Reunion Summer

Pauline Mortensen

It was a great day when I did not pass out because of the rat. Elaine said, "You stay by that door, and I will go in this door and chase him out of the closet there." And she pointed at where I was kneeling on the floor in front of the first door with a pie plate in my hand. Then when the rat came through, there was a great scurry of frantic feet past my knees. But the important thing is—I did not run. I did not run, scream, or faint. It was a great day for little sisters, a great day for womankind. For when we finally convinced the rat to run in the right direction, we managed to pin him permanently between the wall and a free-flying utensil drawer.

We did this because rats are a serious matter. It is important to remember that. In the clinches. You never want to turn your back on an overconfident rat. He moves when you move. Takes up the slack in the distance between you. You turn around and there he is three feet closer. Nearer the mark. So you have to face him off. Nose to nose. It's the only way.

Roger and I have lain awake for a week in the loft of our unfinished cabin in the mountains of northern Idaho, listening for another rat. There is only this one rat. We are pretty sure. Only one who came in through a hole in the eaves when we piled some boards against the outside, only one we heard squeaking his twigs in between the wall and the tin roof and saw disappear in our flashlight beam, catlike into the wall. Every night we listen for the sounds of rustling, the slight cough of something disturbed. We know he is still there although we haven't seen him for two days. We know he is still there because every morning we find the black nuggets of his indiscretion, placed in patterns of three all over the cabin floor, by the wood box, by the door, beside our shoes and socks. Little notes he leaves for us, "Kilroy Was Here," "Yankee Go Home," and "I have not yet begun to fight." Little MacArthur messages, nibbled in the ends of bread sacks, promising, "I shall return."

Pauline Mortensen is a writer living in Orem, Utah. Her book *Back before the World Turned Nasty*, winner of the 1988 publication prize of the Utah Division of Fine Arts Creative Writing Competition, will be published in 1989 by the University of Arkansas Press.

And here is the thing. We personify the rat. I know we personify the rat. What else can we do when he scratches rat tracks across our dreams? We have to play his game. We have to play by his rules. We have to stay on the same rat wavelength, or we may miss everything.

I fold back the covers for a minute. I think I heard something. I listen in the night air, my face suddenly cold. "Do you hear anything?" I whisper. Roger comes out for air too, tunes in his radar in the direction of the rail. "Sounds like the kitchen."

"Are you sure? Are you sure it wasn't by the door?" We have left the poison by the door.

"No, the kitchen sink. I think he is thirsty."

We hear nothing for a while, get cold, and then cover our heads again. This is the way we sleep. We leave as little as possible to chance. We pull in our arms and legs, never leave them dangling out over the side to attract things that go bump in the night, never leave an excess of anything exposed, an invitation to rat-bite. There is only the tiny opening for our faces in the covers, only our senses sticking out, for breathing and for listening. There is no such thing as an absolutely quiet rat.

And this has been our camping experience this summer, getting ready for the family reunion, putting in windows, putting in doors, putting in the loft, putting in rat-protection. Elaine says, "I don't know how you can stand to sleep out there with a rat," a comment aimed at only the four-legged kind. Elaine is safe and secure over at the old house, safe and asleep within the same walls where we killed the closet rat, a closet rat that Elaine said was smaller than the both of us. "I don't know how you can sleep with a rat," my sister says, the same sister that only yesterday stood safe across the room, saying "Get him, Franki. Get him," as we chased some incredibly small field mouse across that same kitchen, only out the back door this time.

And she is the one who put me up to this, twenty-five years ago, the one who said I was brave to stand up to the first rat, the one who made me afraid to admit that I was afraid. Elaine, my sister, whose feet have turned to clay after all these years.

So this is her fault. I owe it all to her. My face will be gnawed away before I will admit that I am a coward. As for Roger, there is nothing in particular that he has to prove, but he will stay here by my side, spending a faithful rat-vigilance in the loft of our cabin.

We listen for the sounds of rolling dice, rat games on the lower level. Roger thinks he hears something. I think about the poison we have put out, the boxes of pellets placed where the rat would least expect it. Little red boxes of insecurity that will drive him wild for

water, will drive him out the door we have left slightly ajar on his behalf. It is much more subtle than a gun. The only problem is, if you leave the door open for the rat to go out, there is no telling what else might come in. It is one of the great rat dilemmas like all things in life.

At the entrance to the property, the family property, we have installed a gate, a great green farmer's gate chained between a great tree and a cement post. Ed installed the gate, Ed, the brother with the most to lose because of his investment in his cabin. So far we have a community of three—the old house that has been Elaine's since Mother died, the barn that Ed turned into his cabin and started this whole reunion business by making this a nice place to come to, and the woodshed, which is where we are lying in our unfinished state, listening for the rat.

So we installed the gate in early spring. We've been here on and off all summer. In July we had the reunion. And through it all has been the irritating presence of Jarvis. Jarvis the youngest next to me, Jarvis who has an unnerving way about him. Who comes up here with nothing much to do and gets annoyed because we won't stop our work and talk to him. Who keeps coming by to borrow things, things we hauled seven hundred miles to use ourselves on our cabin.

Jarvis, of course, was offended by the gate. "Who do you think you are locking out?" he says. "Why didn't anyone tell me about the gate?" Jarvis came when nobody was expecting him. Came three days early to the reunion, while Roger and I were in town getting supplies. Came pulling his pickup and camper with a Volkswagen.

There are two stories about the camper and the Volkswagen. The first one goes like this: "Halfway over the pass, the pickup threw a rod, and we had to come on the rest of the way pulling it with the Vee-Dub." This is Jarvis's story. But Jarvis has many kids. And the way they tell it, when you have one of them off in the corner pumping her for information, is this: "We pulled the camper all the way from Washington. Daddy wanted something to stake his claim with." That is, Jarvis towed this trash-heap of a pickup camper all the way from Washington state because he wanted to dump it on family land, wanted to ditch his trash in the valley of our rustic retreat, an eyesore for the deer to graze around, oxidized aluminum in the periphery of our zoom lens. And that's my brother Jarvis, grinding the gears of his Volkswagen just so we would all remember that he too is entitled.

And what do you do with a brother like that? That thinks you are out to gyp him? That measures everyone else by the standards

he sets for himself? That comes up here packing a bolt cutter—to insure his rights?

The deal with the chain has been going back and forth. It may never end. Ed put up the chain with the intention of keeping out the “uninvited.” And Jarvis saw through that, thought the chain was made just for him. To keep him off the family land. Ed made a big stink about giving him a key, then didn’t, so Jarvis comes up here unannounced and clips his way through with the bolt cutters. Then he puts on his own cheap lock in the place of the missing link, puts some ornery cheap thing in between as a link, some cheap lock it only took Ed one try to smash off. And now Ed says that Jarvis is not getting a key even if he does ask nice. But Jarvis will come through. I’m putting my money on Jarvis.

So it has been a big summer for attracting relatives. The cool weather and no mosquitoes drew them, the smog-free air and potato salad lunch, the open land and cracker pie, the old home place drew them, drew them like flies to the family reunion. In bigger numbers than ever before, in bigger campers, bigger tents, bigger families. Bigger plans for building their own cabins up here. We’ve tried to get the word out that it’s already crowded enough. But still they come to the reunion with all their plans, waving their arms in the direction of imaginary structures, and all their four-wheelers stirring up the dust. Let’s not forget about that. And all their talking around your campfire, into all hours of the night. All their teenagers sneaking in and out of the brush, darting adolescent eyes at one another across your conversation. And then there has been Jarvis and his gun.

Someone should write and tell these people that a dog is not the same thing as a kid. We have to put up with their kids, but we do not have to put up with their dogs. And dogs that are on their last legs, we especially could do without them. They are not at all inclined to be friendly even if we are related. Such a dog does not know the difference between a first cousin and a second, once or twice removed. We are all the same to him under the skin, all alien, and he sits guarding the porch, no respecter of persons, baring his teeth like he wants to take off your leg. Someone should write and tell these people. So Jarvis doesn’t have to.

Here’s the scenario. Here is cousin Wallace, young cousin Wallace coming to the reunion for the first time, for the first time since he’s been off drugs, bringing his dog, the only living being he truly loves in the whole world, bringing this dog to play frisbee with in the field. And get this. Wallace keeps a journal on the dog, keeps a journal on the best frisbee-playing dog in the world, a record of the number of frisbees thrown, and the number of frisbees caught.

Writes it all down in his frisbee book, about the dog with the 90 percent average. And another thing, the dog has cancer. He is not expected to live to the end of the year. And still one more thing, the dog especially likes to nip at Jarvis's kids. Nips at them without warning when one of them wants something obnoxious like to come in the house. (And who said dogs lack intelligence?) Jarvis gets upset at this, his little muffins being mauled by Wallace's dog. So this is what Jarvis does. Good old Jarvis. He walks up to Wallace when he's petting Buzzy—the dog's name is Buzzy—he comes up to Wallace and pulls a pearl-handled derringer out of his pocket and says, "You do something about that dog, or I will." A kind of family-reunion-make-my-day.

Good old Jarvis. About as much tact as a cement truck. I think we can predict that this will be the last we see of Wallace, as well as Buzzy. But Jarvis will still be around. He is made of sterner stuff. You couldn't knock him down with a crowbar. Or dissuade him from showing up at the reunion, not when real estate is involved. Jarvis went to real estate school. He knows the value of land. Right at first we all thought that real estate school was going to help, the lessons they give on how to attract potential buyers, the personality improvement part. We all thought it was going to help. He was nice for an awfully long time. Then he went into remission. Went back to his normal self and became the old Jarvis that we all "know and love," the good old Jarvis who comes to the reunion with a chip on his shoulder.

Jarvis who is trying to push his weight around. This is what we say about him. He is the punch line of all of our jokes. We say, "Who ate the cookies?—Jarvis." "Whose spare tire shall we roll down the hill this year?—Jarvis's." "What's the difference between an elephant and a bread box?—Jarvis." We pelt him with our verbal abuse, and still he keeps coming back for more. A little slower every year, less quick with his response, which makes us think we are wearing him down.

Of course, there are other subjects that one can bring up around Jarvis which are especially rewarding. One of them is women's rights, or women's lib, which is the term he would recognize. So Jarvis comes over to our cabin to borrow a screwdriver, and five or six two-by-fours to lay across his camper while he is repairing a leak. "Look's like she cleaned up around here since I was here before." I notice this while I'm painting around a window. "What do you mean she?" I say. "Roger did that while I was fixing the saw," the skillsaw, which coincidentally was invented by a woman. I sprinkle this information out like I am chumming fish.

"Should have known. Should have known," he says, and takes a handful of nails. He takes a handful of nails because he is building a porch for his camper, a porch out of our two-by-fours.

Jarvis is good at playing this game. It intimidates the living rat bait out of me. Makes me wonder what will still be here when I come back some time. What will be left after Jarvis comes up when we're not here and makes his rounds. Jarvis and his sticky fingers.

I say to Jarvis, "What is it exactly that you plan to do with your lot? Are you going to start a cabin this year?"

Jarvis doesn't answer immediately. There is something grinding away underneath.

"One of these days," he says.

When we talk about cabin building it is coming close to the mark. Close to the poison by the door. Ed and Elaine are the trustees for this place. They have the final say. Big brother and big sister having the final say. It rubs Jarvis raw.

"It takes more planning, more figuring, when you have to do it from scratch," he says. And then he adds, almost as an after-thought, "You had it easy."

We had it easy, me and Roger, traveling seven hundred miles just to put in a nail, seven hundred miles for two or three weeks out of the year, seven hundred miles for the last three years and still we have not replaced the roof, the roof of the old woodshed we have slowly been turning into our cabin. The galvanized steel roof that Jarvis and everyone else shot to pieces when they were boys. The roof that leaks like a sieve if we don't patch it every time we're here.

"Sure, Jarvis, everyone's got it easy," I say. "This place wouldn't be here if it hadn't been for Ed. The way I figure is that he has a right to have the say. And he does have the legal say."

This gets him where he lives. He looks off in the distance. "So you are in with them," he says.

"I'm not in with anybody. That's just the way it is." And then Jarvis begins to stretch himself, begins to flex the self-assurance I thought I was wearing down. He has one ace in the hole. He always does.

"You and Elaine got title yet?" he says, and the corners of his mouth begin to curl. And this is the ultimate weapon in the war we have been waging. Jarvis's ultimate threat. The last time this place was surveyed was shortly after Lewis and Clark. And the survey markers are old and the survey markers are gone, but Jarvis finds them. He has taught himself "surveying," just so that he can come up here to measure the land with his used equipment. Climbs all over the hills in front of the house with it, climbs all over the hills in back. Spends one whole reunion surveying our land. The land our

mother left to us, the whole family, in trust. The land that none of us will be able to sell until it is surveyed.

His surveying makes everyone nervous. "What are you trying to prove, Jarvis? Just what are you trying to prove?" "I'm not trying to prove anything," Jarvis says. "Just don't want to build a cabin on a piece of property unless it is mine. Just don't want to take a chance on losing it."

And here is the rub. The results of Jarvis's survey, the hold he has over all of us. Back when the place was sold, back when it was sold and resold and traded around in the family, and then sold back to the government, all but these ten acres, someone made a great mistake, some county engineer who wrote the coordinates on the title, who squared off our land from someone else's memory. Someone made a great mistake and said our property is here, when it was really supposed to be over there. They wrote it down and changed the way it had been for a hundred years. Put us down over there, thirty yards on the other side of the house, the house that has always been in this family, but is really a figment of our imagination.

And this is where he gets us, makes us all pull the covers up over our heads. "You all can go along building your pipe dreams," he says. "But just in case the Forest Service gets any notions, I'm building over there." He waves his arm in the direction of the house, indicating the other side. "And when I record the title, I will have to record it right. And that will leave you all sitting out here in thin air. I will record my cabin as being on the edge of the land, and that won't leave you on the edge of anything, because you are really on government land. I have to do it," he says. "I'm conscience bound."

And that's my brother Jarvis, squeaking his twigs in between the roof and the wall and setting all our nerves on edge. Nerves that didn't have to be set on edge. For as far as we have been concerned all these years, what the government doesn't know won't hurt them. As far as the Forest Service is concerned, this is our place, our place unless anyone goes messing around with a survey and fiddling with county records. Elaine has put it this way, "If he thinks he's going to get a title out of me, it will be over my dead body." She says. And that is the end of the story.

So there have been more than a few rats at this reunion, as Roger and I have pounded our few nails into the hollow shell of the cabin. It has been a rat reunion summer, in fact, with us lying awake listening to the gnawing going on beneath us, under our loft, the loft we have built out of pipe dreams. A pipe dream. Some drug-induced hallucination, I suppose. I've never really thought about it before—some metaphor that has lost its meaning, but has come

scratching its way back between the cracks of a new idea. It all makes perfect sense now, now that I've seen up close the beady eyes of the rat—the cabin rat standing on confident tiptoe, blinking his pink eyes and wagging his rope tail—the mountain rat who pokes his head out for just a peek from the insulation tear, before burrowing deep and safe inside our cabin walls.

It's Just a Phase You're Going Through

J. Bevan Ott

I wish to start by telling you about Iduna. Iduna is a calorimeter, and part of a family of instruments that very probably makes Brigham Young University the calorimeter center of the world. Iduna's immediate calorimeter family includes Neptune, Mrs. Olsen, Sally, Rita, Marelda, and Big Ben.¹ Iduna also has a number of calorimeter cousins, aunts, uncles, and other more distant relations here at Brigham Young University. But Iduna is a special member of the family to me. Dr. James J. Christensen had his hand in the design and construction of this family of calorimeters, and he and I built Iduna together. Jim and I were close friends for a number of years, but we had never collaborated on a research project until the fall of 1983. At that time, we decided we would work together to build a special, highly accurate calorimeter and use it to establish a reference system to test the reliability of other calorimeters.

During the fall of that year, we gathered together the components to make a calorimeter, finding a computer here and a controller there, along with temperature and pressure measuring devices, a power supply, multiplexer, frequency meter, valves, and tubing. Over the Christmas holidays, Iduna was born. We rolled up our sleeves and worked long and hard putting her together. Ordinarily, a calorimeter like Iduna would cost from fifty to seventy-five thousand dollars. We were pleased that after all the scrounging, out-of-pocket expenses to build Iduna were about 10 percent of that amount.

I wish to pay tribute at this time to Jim Christensen. I am sure most of you know he passed away suddenly last fall. Brigham Young University will sorely miss his genius, and I especially miss his friendship.

J. Bevan Ott is the Joseph K. Nicholes Professor of chemistry and chairman of the department of chemistry at Brigham Young University. This essay was originally presented as the Distinguished Faculty Lecture for 1988. Professor Ott writes: "Special thanks go to my wife RaNae for thirty-five years of understanding and support, to Linda Whittaker for typing thirty-seven drafts of this talk (a conservative estimate), to Brian Woodfield and Jay Purdy for helping with the demonstrations, and to Rex Goates and Jim Christensen for years of exciting and fun collaboration on research."

Calorimeters are devices for measuring heat effects. Iduna is specifically a high-temperature, high-pressure, isothermal flow calorimeter. She is capable of measuring the heat absorbed or liberated when liquids are mixed together, and she can do it very accurately at temperatures ranging from twenty to two hundred degrees centigrade and at pressures ranging from atmospheric to 250 times that value. We named Iduna for an ancient but beautiful German goddess who kept the apples of youth that she withdrew from a never-ending supply in her basket and gave to the other gods to keep them from growing old. Iduna is an appropriate name for this instrument. The research or creative work we accomplish with help from an Iduna are the apples that keep our research program alive and help us stay active and on the cutting edge of our professional field.

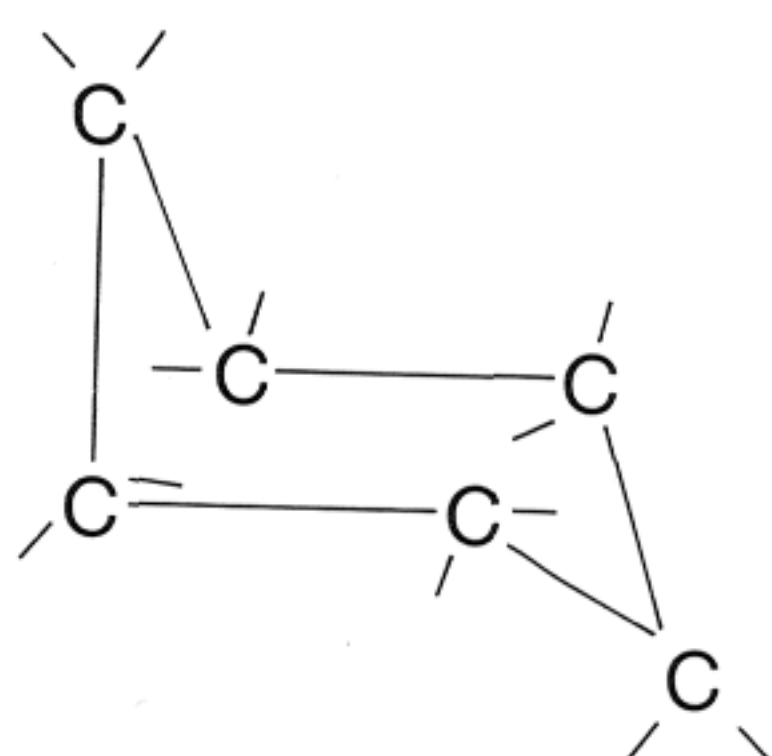
Iduna has lived up to every expectation. Recently, we made heat of mixing measurements with Iduna on mixtures of the two liquids cyclohexane and acetonitrile whose molecular structures are shown in figure 1.² The cyclohexane molecule contains a ring of six carbon atoms. The molecule is nonpolar, and the ring is bent to give a nearly spherical shape. Acetonitrile is an egg-shaped polar molecule. That is, there is a difference in electrical charge between the two ends. The (acetonitrile + cyclohexane) system was chosen to study the heat effect, and hence the interaction, when polar and nonpolar molecules are mixed.

The results of the heat of mixing measurements are shown in figure 2, in which we plot heat of mixing against composition of the mixture.³ The upper curve gives the results obtained at 100°C, while the middle and lower curves summarize the measurements made at 75°C and 50°C, respectively. The heat of mixing is expressed in joules/mole. A joule is the unit of energy in the International System of Units and is the preferred way to express amount of energy in scientific discussion. It takes a little over four joules to give a calorie, which is a unit of energy you may be more familiar with. A mole is a number of atoms or molecules similar to a dozen or a gross, only much, much larger. A mole contains Avogadro's number of particles, nearly 6×10^{23} (that is, a number starting with six followed by 23 zeros). Thus, a heat of mixing in joules/mole is the heat absorbed or evolved in joules when enough acetonitrile and cyclohexane are mixed to give 6×10^{23} molecules of mixture. Although the number of molecules is large, the mass of a mole is usually of the order of grams and is a convenient amount to work with in the laboratory.

The American Chemical Society has a bumper sticker with the caption, "Chemists Have Solutions." The solutions we will be

STRUCTURES OF CYCLOHEXANE AND ACETONITRILE

Cyclohexane



Acetonitrile

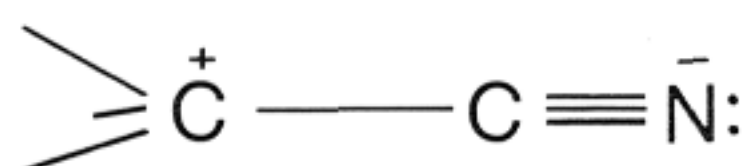


Fig. 1. Structures of cyclohexane and acetonitrile. Organic chemists represent molecules with only the carbon and nitrogen skeletons shown. Hydrogen atoms are at the end of each projecting bond. The dots on the nitrogen in acetonitrile represent a pair of electrons not used in bonding.

HEAT OF MIXING FOR THE (CYCLOHEXANE + ACETONITRILE) SYSTEM

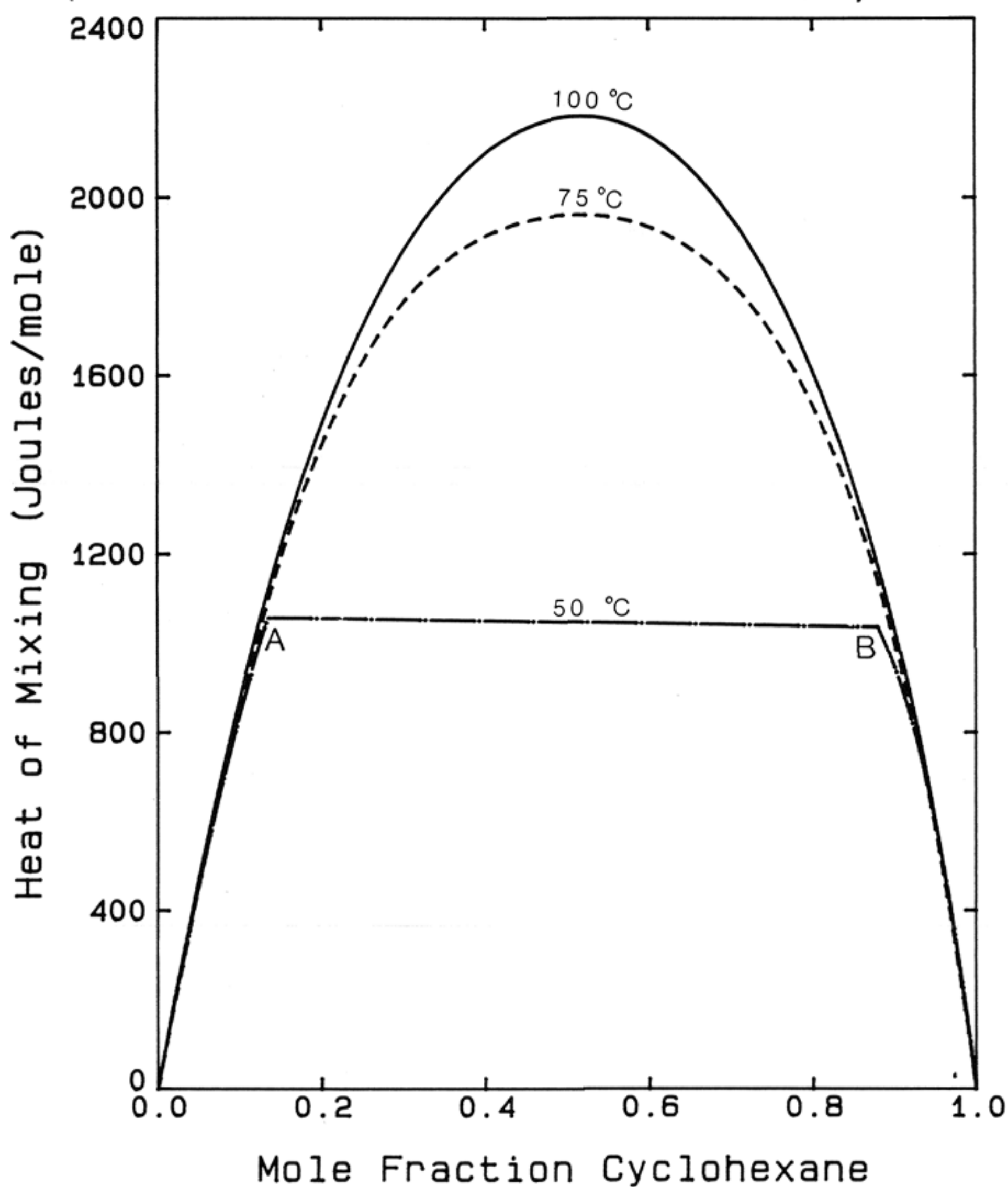
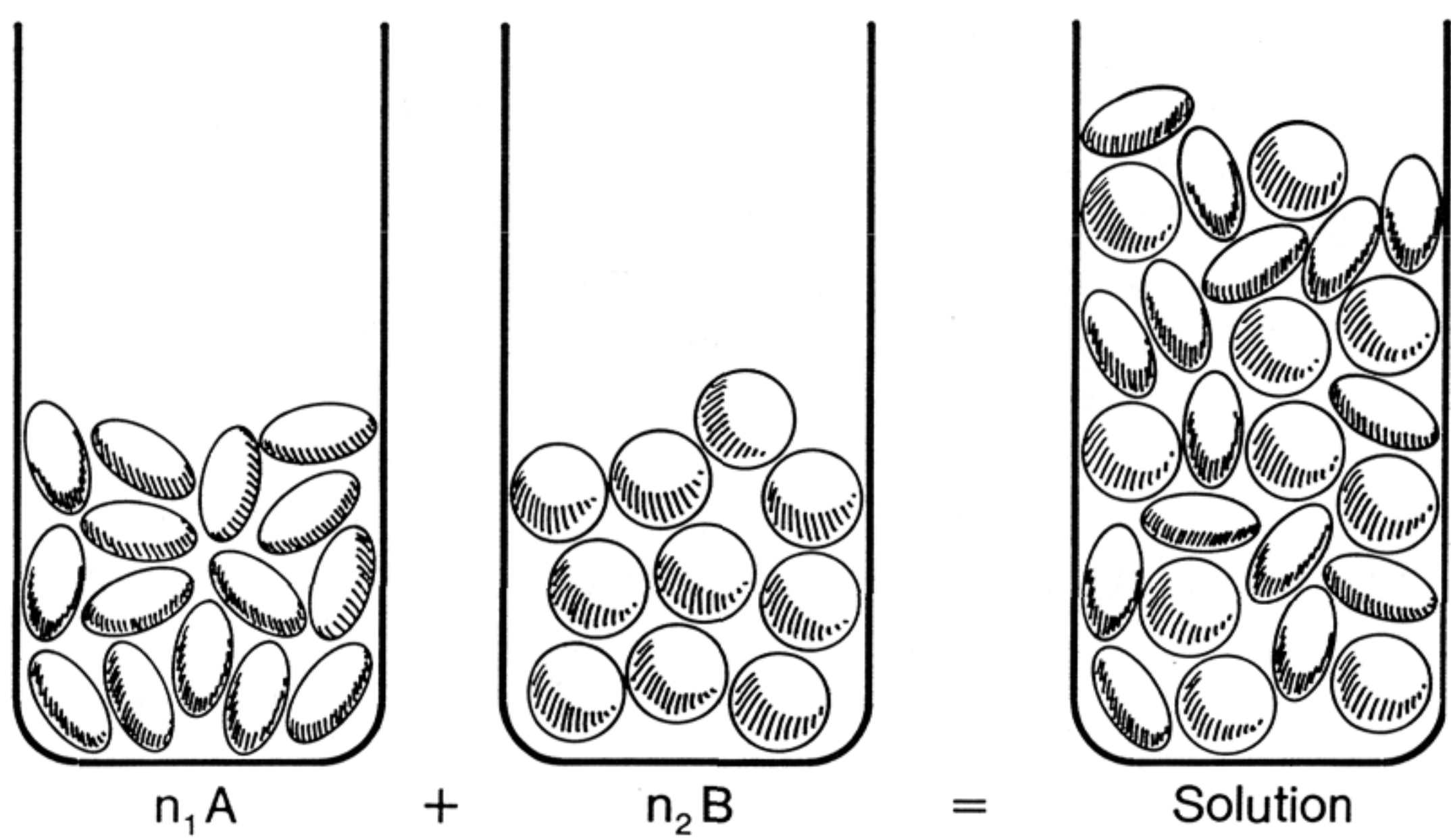


Fig. 2. Heat of mixing versus mole fraction of cyclohexane for mixtures of cyclohexane and acetonitrile. The upper curve (solid line) gives the results at 100°C, the middle curve (dashed line) is for 75°C and the lower curve (dashed-dotted line) is for 50°C. Phase separation occurs at 50°C with the compositions of the saturated solutions given by points A and B.

CHEMISTS HAVE SOLUTIONS



Mole Fraction B = $n_2 / (n_1 + n_2)$

Fig. 3. The mixing of two liquids to form a solution. The mole fraction of B in the mixture is equal to n_2 , the number of B molecules divided by $(n_1 + n_2)$, the total number of molecules.

talking about are homogeneous mixtures of two or more substances. In figure 2 the heat of mixing is plotted against the mole fraction, which is the measure we use for the composition of the solution. It may also be thought of as the molecular fraction. Thus, when the mole fraction is 0.5 the mixture has an equal number of cyclohexane and acetonitrile molecules. Figure 3 illustrates the mixing of egg-shaped A molecules with spherical B molecules to form a solution. The mole fraction of B is equal to n_2 , the number of B molecules in the mixture divided by $(n_1 + n_2)$, the total number of molecules.

Look again at the heat of mixing graph shown in figure 2. The rounded heat of mixing curves obtained at 75 and 100°C are as expected for a system of this type, but the flat region of the curve at 50°C requires some explanation and interpretation.

We can understand what happens if we attempt to mix cyclohexane and acetonitrile. At room temperature they do not dissolve in one another completely and separate into two liquid phases. We have measured the compositions of the two liquids as a function of temperature and determined that the one on the bottom is mostly acetonitrile and the one on top is mostly cyclohexane. But neither layer is a pure substance; the top layer contains some acetonitrile and the bottom layer some cyclohexane. Furthermore, the compositions of the layers vary with temperature. The quantitative description of the system is given in the diagram shown in figure 4 in which solubility is plotted against temperature.⁴

The temperature is expressed in °C on the right side of the diagram. Also plotted on the left side is the Kelvin (K) or absolute temperature, which is the one most commonly used by scientists. The Kelvin and centigrade scales have the same size of temperature increment, but the Kelvin scale is displaced by 273.15 units so that the temperature becomes zero at absolute zero. Thus, ice melts at 0°C or 273.15 K, liquid water boils at 100°C or 373.15 K, and room temperature is usually around 25°C or 298.15 K.

In figure 4, the solid curved line gives the solubility. Any mixture with an overall composition and temperature that lies inside the curve separates into the two liquid phases with compositions given by the lines on each side. The dashed lines show that at 50°C the two phases have compositions of 0.135 and 0.880 mole fraction cyclohexane. Notice that the solubilities increase and the compositions of the two solutions approach each other with increasing temperature. At 74.5°C, the two phases become one. This highest point on the solubility curve is known as the critical point. Above this temperature only one phase is present, and the liquids are miscible. Once this phase behavior is understood, the

(LIQUID + LIQUID) PHASE DIAGRAM
FOR THE
(CYCLOHEXANE + ACETONITRILE) SYSTEM

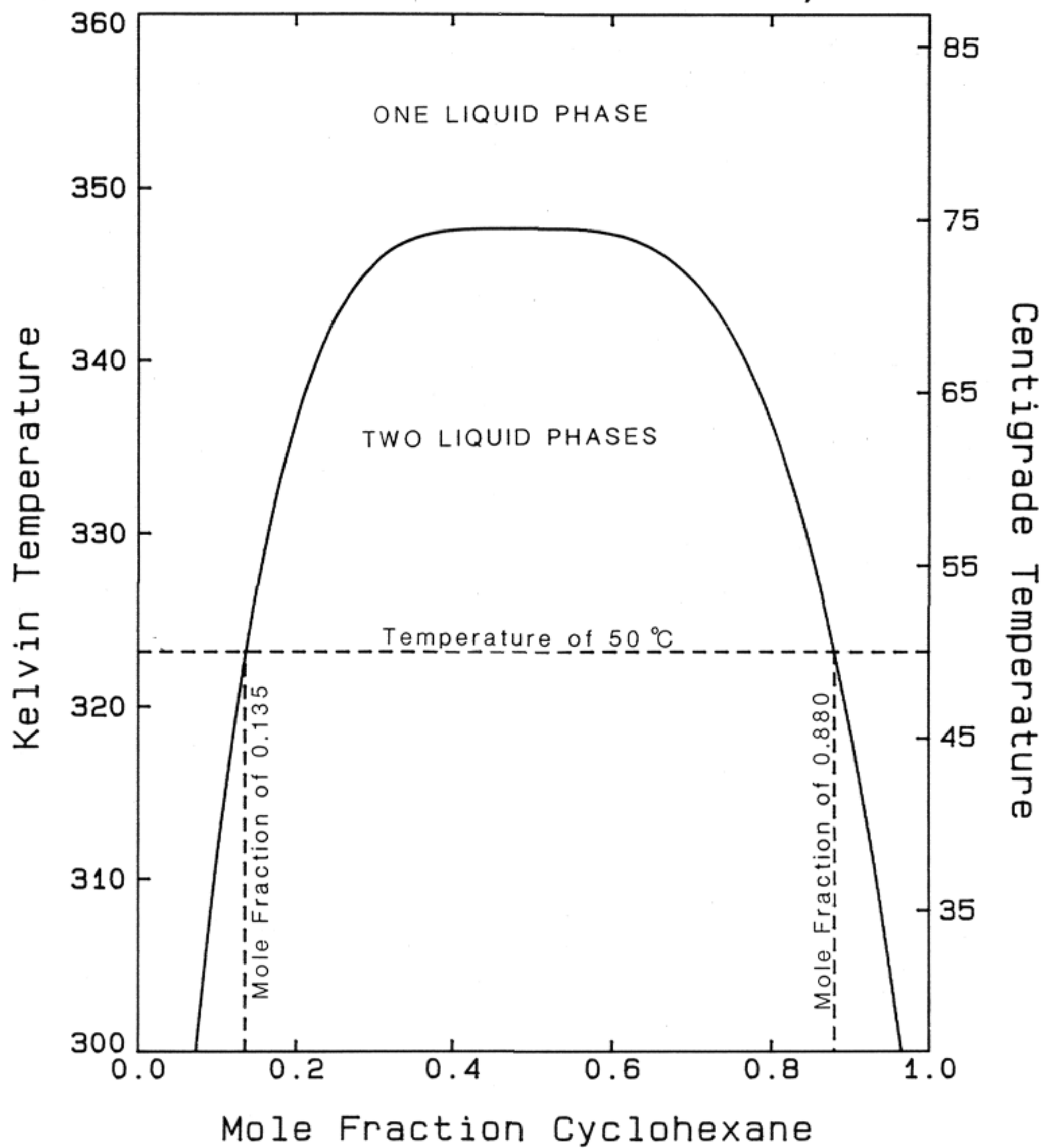


Fig. 4. Compositions as a function of temperature of the two liquid layers which form when cyclohexane and acetonitrile are mixed. The dashed line at 50°C shows that, at this temperature, the two liquid phases have the compositions 0.135 and 0.880 mole fraction cyclohexane respectively.

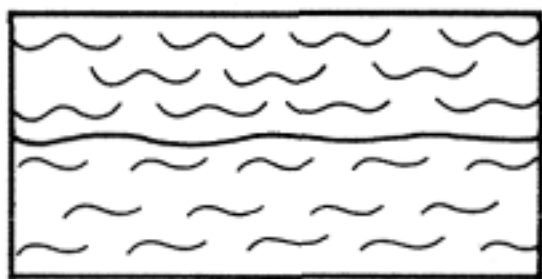
heat of mixing curve is easy to explain. At 75 and 100°C, we are above the critical temperature, complete mixing occurs over the entire composition range, and a normal heat of mixing curve is obtained. The nearly horizontal linear portion of the heat of mixing curve at 50°C results when complete mixing does not occur. The breaks in the curve (points A and B) occur at the solubility limits. The mole fractions corresponding to these breaks are 0.135 and 0.880, which are the same as the solubilities predicted from the solubility curve.

The effect we have just described is an example of (liquid + liquid) phase equilibrium. That is, two liquid phases are in equilibrium. The graph of temperature versus solubility shown in figure 4 is an example of a binary (liquid + liquid) phase diagram. (Liquid + liquid) equilibrium is only one of several kinds of phase equilibria that can occur. The different types are summarized in figure 5. Two liquids are together in (liquid + liquid) phase equilibrium as shown in the first example. (Solid + solid) phase equilibrium occurs at a transition temperature where the two forms of the solid, represented in figure 5 by prisms and cubes, can exist together. Solid and liquid forms of a substance are together at the melting point where (solid + liquid) phase equilibrium is established. Vapor and liquid exist together when (vapor + liquid) phase equilibrium is obtained. The equilibrium gas pressure is known as the vapor pressure. The boiling point is the temperature at which the vapor pressure equals atmospheric pressure. Finally, (vapor + solid) phase equilibrium occurs when solid and gas exist together. The equilibrium gas pressure is known as the sublimation pressure, and the sublimation point is the temperature at which the sublimation pressure equals atmospheric pressure. Melting points, boiling points, sublimation points, and transition temperatures are invariant for a pure substance. That is, the temperature stays the same as long as both phases are present and in equilibrium.

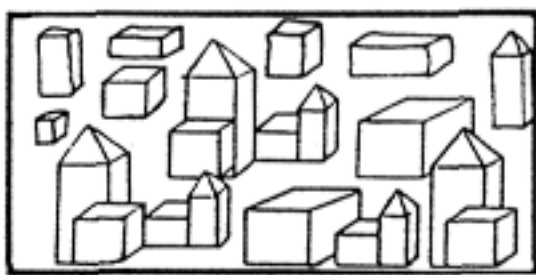
When a second component is added to form a solution, these previously invariant temperatures change. This is especially true of the melting point and the boiling point, and these are the effects we want to describe in more detail. We will now consider an example of a binary or two component (vapor + liquid) phase diagram to see how the boiling point changes with composition and then describe several (solid + liquid) binary phase diagrams where we see how the melting point changes when we add a second component.

The (vapor + liquid) phase equilibrium we will use as an example involves mixtures of liquid nitrogen and liquid oxygen. We will make some boiling temperature measurements on this system from which we will construct the phase diagram. The

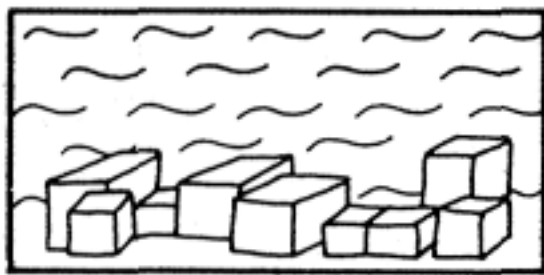
TYPES OF PHASE EQUILIBRIA



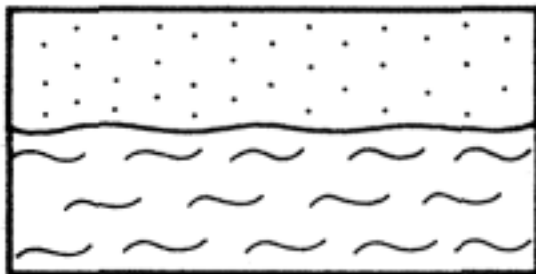
liquid + liquid



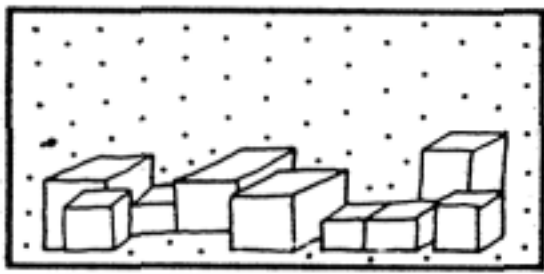
solid + solid



solid + liquid



vapor + liquid



vapor + solid

Fig. 5. Types of phase equilibria

temperature measuring device we will use is not one you would find lying around the house, or in the usual research laboratory for that matter.⁵ The end of the temperature probe contains a coil of platinum wire wound in such a way as to be free of mechanical strains. The electrical resistance of this strain-free platinum resistance thermometer changes with temperature and is the measure of temperature. This thermometer has been calibrated to be part of the International Practical Temperature Scale.

The electrical resistance of the probe is measured with a special high-precision resistance meter. The resistance reading of the probe is sent to a computer through an IEEE bus. The computer traces this resistance reading on the monitor as a function of time and also converts resistance to temperature and displays it at the top of the monitor screen in K or °C. The temperature trace is shown as a yellow line on the screen. Full scale is one ohm of resistance or 10°C, and the trace repeats each time it goes off scale. This apparatus is very accurate, very reproducible, and very expensive! The thermometer probe itself costs almost three thousand dollars, and it would cost more than twenty-five thousand dollars to assemble the entire apparatus.

We will use this thermometer to make some boiling point measurements from which we can construct the (vapor + liquid) phase diagram for the (oxygen + nitrogen) system. The temperature probe has been placed in a flask of boiling liquid nitrogen. This flask is made of glass and is transparent so that we can see what is happening. It has a double wall with a vacuum between the walls to insulate the sample from the surroundings. The sample is being stirred with a magnetic stirrer to keep it at a uniform temperature. The monitor shows that the boiling temperature of the liquid nitrogen is constant at 76.26 K or -196.89°C, and we store this value in the computer. If atmospheric pressure does not change, the temperature will hold at this value as long as both liquid and gaseous nitrogen are present, or until we add a second component. We also have a sample of liquid oxygen in a similar container. It boils at a constant but different temperature from the liquid nitrogen. The thermometer is transferred to the liquid oxygen. When equilibrium is obtained, the boiling temperature is found to be 89.00 K. This value is also stored in the computer.

In a third container, again made of glass and insulated with a vacuum jacket, we have liquid oxygen in an inner chamber surrounded by boiling liquid nitrogen so that the oxygen is at the boiling temperature of the nitrogen. This inner container is graduated so that we can determine the amount of liquid present. By reading the oxygen level, we see that we have 26 ml of liquid

oxygen. We now input this volume into the computer and add liquid nitrogen to the inner container. A magnetic stirring bar in the bottom stirs the mixture. The total volume is 51 ml, and this number is also stored in the computer.

We now take the thermometer out of the liquid oxygen and put it in the mixture. We remove the liquid nitrogen from the jacket surrounding the mixture and blow room temperature nitrogen gas through this jacket. The nitrogen gas warms the mixture, and the temperature increases. Very soon, boiling will start, at which time, the temperature will hold steady.

From our measurement, we see that the mixture boils at 80.30 K. This temperature will slowly change since boiling changes the composition, and we store this temperature in the computer as quickly as possible. The computer is programmed to plot the (vapor + liquid) phase diagram after we have input the three temperatures and the two volumes. We now instruct the computer to perform this operation. The three temperatures we have measured, along with the complete phase diagram, are displayed on the screen, and show how boiling temperature changes with mole fraction. This diagram is reproduced in figure 6. We can use it to find the boiling temperature of other mixtures. For example, air is 0.20 mole fraction oxygen. The dashed line displayed in figure 6 at this composition shows that liquid air would boil at 76.8 K.

Our apparatus is a crude one for measuring a (vapor + liquid) phase diagram at atmospheric pressure. If we were going to measure this phase diagram to obtain results suitable for publication in the scientific literature, we would use a much more sophisticated apparatus that would keep track of pressure, temperature, and concentration more precisely and obtain boiling points over the entire range of composition instead of at one point. Usually, (vapor + liquid) phase diagrams are simple like the one we have constructed. We will now consider some (solid + liquid) phase diagrams that are more complicated, and often more interesting.

The first (solid + liquid) phase diagram we want to consider has water as one of the components. To demonstrate the effect of composition on the melting temperature, our thermometer probe has been placed in an insulated flask containing a mixture of ice and liquid water. When solid and liquid water are present together, we have (solid + liquid) phase equilibrium of a pure substance, and the temperature is fixed. The value we obtain with our thermometer for the melting point of water is 0°C or 273.15 K.

Let us take the (ice + liquid water) mixture and add liquid ethylene glycol to it. By following the temperature trace on the monitor, we see that the temperature decreases as the ethylene

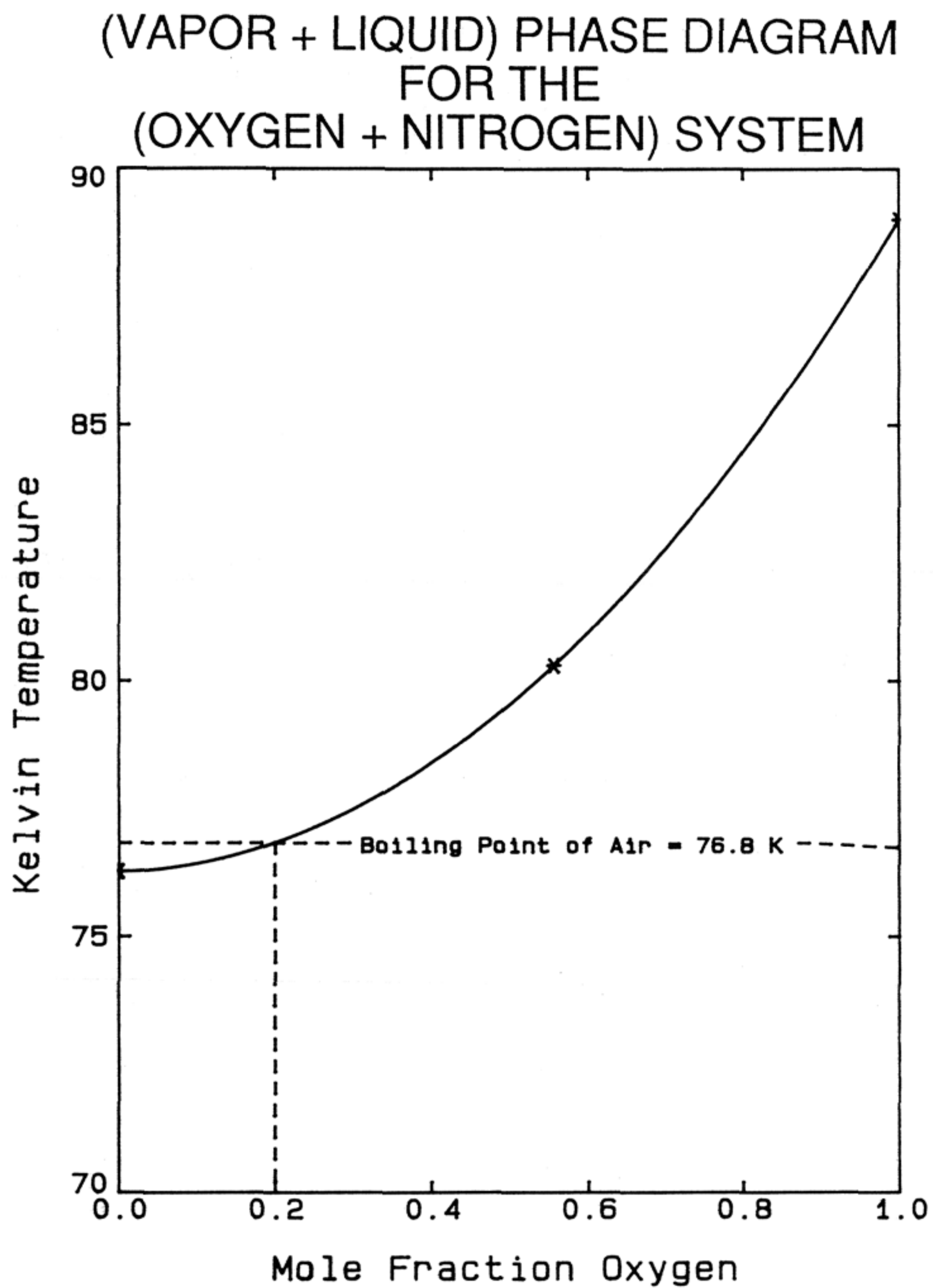


Fig. 6. (Vapor + liquid) phase diagram for the (oxygen + nitrogen) system.
*, experimental measurements from the demonstration.

glycol dissolves in the water until the freezing temperature of the mixture is obtained.

The (ethylene glycol + water) system is of considerable practical importance since ethylene glycol is the antifreeze added to the water in the radiator of an automobile to keep the coolant in the engine from freezing in the winter. A number of years ago, we measured the freezing points of mixtures of (ethylene glycol + water) from which we constructed the (solid + liquid) phase diagram.⁶ An obvious question to ask is why did we bother to make freezing point measurements on mixtures of ethylene glycol and water? This mixture was used as a radiator coolant long before we arrived on the scene. Any bottle of antifreeze gives a table with directions for preparing a mixture with a particular melting point, and such directions were available long before we made our measurements.

The answer to the question is that until we came along no one made the correct measurements. The phase diagram, from which the directions on an antifreeze bottle were prepared, is shown in figure 7. In this diagram, melting temperature is plotted against mole fraction of ethylene glycol. Point A in the upper left hand corner is the melting temperature of pure ice, and line AE shows how this melting temperature decreases as we add ethylene glycol. Point B in the upper right hand corner is the melting temperature of ethylene glycol and line BE shows how its melting temperature decreases as we add water. Thus, if a liquid mixture of ethylene glycol and water with a composition given by point u is cooled along the vertical dashed line uv , ice freezes from solution when line AE is intersected. This occurs at a temperature of approximately -34°C . On the other hand, when a solution with composition given by point w is cooled along the dashed line wx , ethylene glycol crystallizes from solution at -46°C where line BE is intersected. The two melting curves meet at point E which is known as the eutectic point. It represents the lowest temperature and composition at which liquid can exist in this mixture. A solution with the eutectic composition would give the most effective antifreeze that could be made from mixtures of ethylene glycol and water, since it freezes at the lowest possible temperature.

This (solid + liquid) phase diagram shown in figure 7 is a simple eutectic binary phase diagram, and it is an example of one of the simplest and most common types that can occur. The phase diagram we obtained for (ethylene glycol + water) is shown in figure 8, and it is more complicated. Line AE_1 is the melting line for ice, and BE_2 is the melting line for ethylene glycol, with E_1 and E_2 as eutectics. A solid addition compound, containing one

(SOLID + LIQUID) PHASE DIAGRAM
FOR THE
(ETHYLENE GLYCOL + WATER) SYSTEM
WITHOUT HYDRATE FORMATION

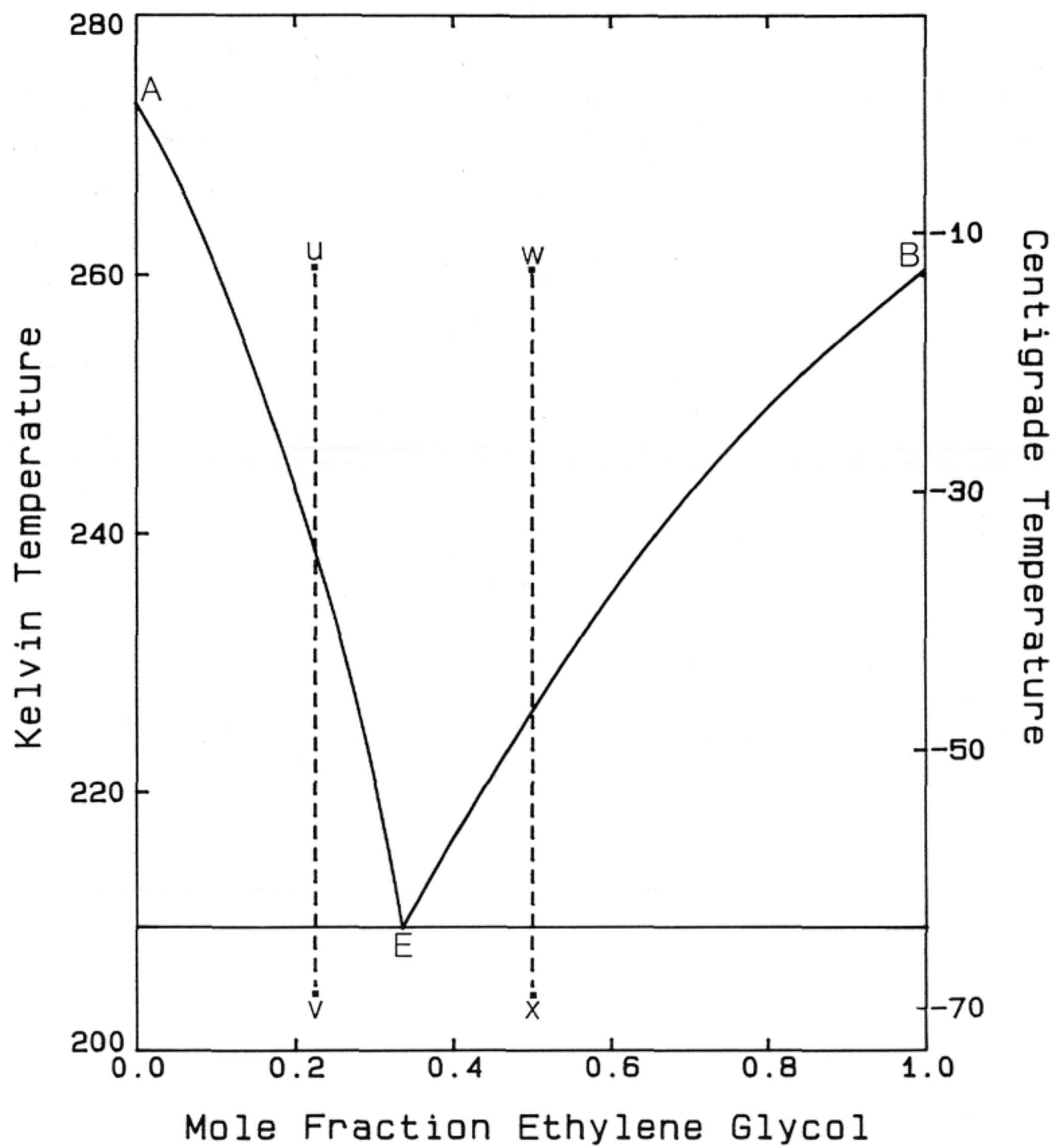


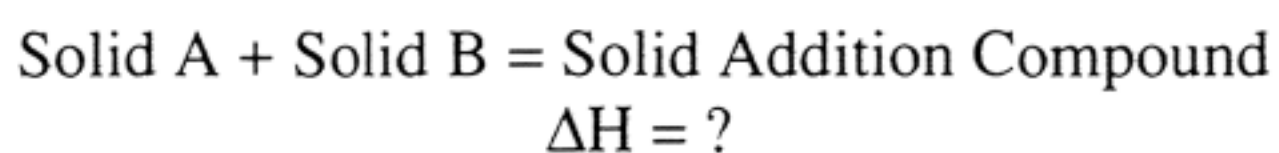
Fig. 7. (Solid + liquid) phase diagram for the (ethylene glycol + water) system without hydrate formation

ethylene glycol to one water molecule, forms in the middle region of the phase diagram. Addition compounds are called hydrates when water is one of the components. Line E_1CE_2 gives the melting curve for this hydrate. If a liquid solution at point y is cooled along the dashed line yz , solid hydrate forms when the freezing line E_1CE_2 is reached. At least in theory this is true. Actually, this hydrate supercools extensively and the mixture can be cooled well below the melting temperature of the hydrate without solid forming. Usually, the mixture supercools so much that ice freezes from solution when the dashed line E_1E_3 , which is an extension of line AE_1 , is reached. This happens if the composition is less than point E_3 . Solid ethylene glycol would form if the dashed line E_3E_2 , an extension of line BE_2 , is reached instead. This occurs if the solution has a composition richer in ethylene glycol than point E_3 .

Equilibrium with phases that should not exist (lines E_1E_3 and E_3E_2 in figure 8) is referred to as metastable phase equilibrium. The simple eutectic phase diagram reported by earlier workers is actually the same as the one we would obtain if we omitted the hydrate. Lines AE and BE in figure 7 and AE_1E_3 and BE_2E_3 in figure 8 are the same freezing lines for water and ethylene glycol respectively, and point E in figure 7 and E_3 in figure 8 are the same eutectic. Earlier investigators obtained an incorrect, or at least incomplete, diagram because they were not able to obtain the hydrate.

Over the past thirty years, Rex Goates and I have studied and reported in the literature approximately two hundred (solid + liquid) phase diagrams obtained from mixing components ranging from simple elemental materials to considerably more complicated organic molecules. We have found many systems that form solid addition compounds, and it is interesting and important from a chemical point of view to understand the nature of the molecular interactions that cause these compounds to form. Examples are shown in figures 9 and 10. They are the phase diagrams for (hexafluorobenzene + benzene) and (titanium tetrachloride + anisole), respectively.⁷ In both of these systems, solid molecular addition compounds form containing equal numbers of moles of the components.

An important clue from thermodynamics that helps us understand the nature of the molecular interactions that cause the formation of the addition compounds is the heat effect for the process in which the solid addition compound forms from the solid components. The reaction is



(SOLID + LIQUID) PHASE DIAGRAM
FOR THE
(ETHYLENE GLYCOL + WATER) SYSTEM
WITH HYDRATE FORMATION

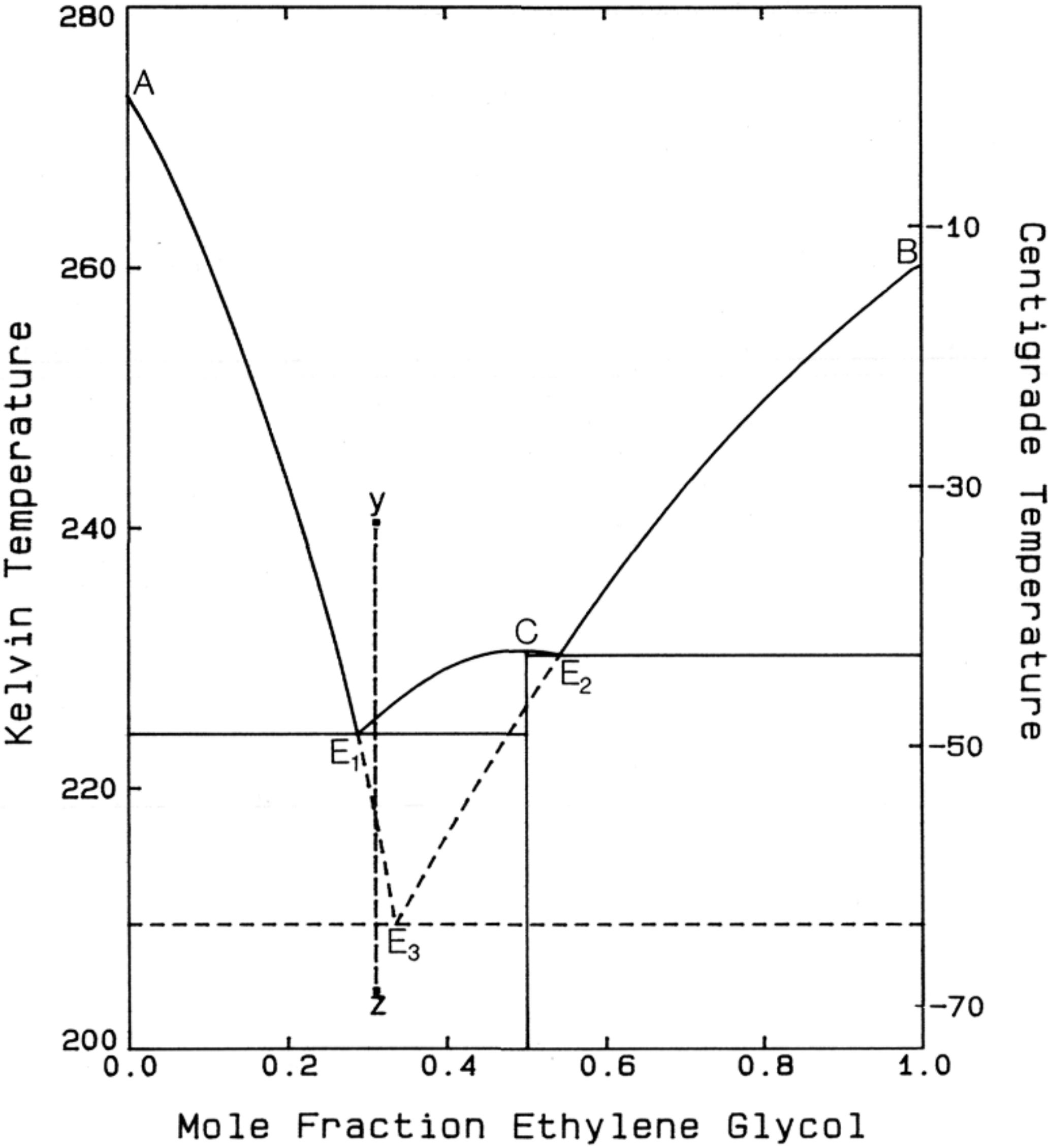


Fig. 8. (Solid + liquid) phase diagram for the (ethylene glycol + water) system with hydrate formation

where A and B are the components. The heat absorbed or liberated in this reaction is represented as ΔH , and it very nearly equals the energy change for the process. It can be calculated from heats of fusion and heats of mixing obtained from calorimetric measurements, but the calculation requires detailed thermodynamic data, and these data are usually not available. Fortunately, we have developed a method based on thermodynamic relationships for calculating this heat change directly from the experimental melting points. Most of the credit for the development of this process must go to Rex Goates along with Steven Goates and Juliana Boerio-Goates, all members of our chemistry faculty.⁸

Before applying this technique, it is interesting to quote from Auguste Comte, whom many of you recognize as a nineteenth-century French philosopher and the founder of the social science discipline of sociology:

Every attempt to employ mathematical methods in the study of chemical questions must be considered profoundly irrational and contrary to the spirit of chemistry. . . . If mathematical analysis should ever hold a prominent place in chemistry—an aberration which is happily almost impossible—it would occasion a rapid and widespread degeneration of that science.

Any of the students who made it through my upper division course in physical chemistry can testify that chemistry has changed dramatically since the days of Comte. Application of the mathematics used in disciplines such as thermodynamics, quantum mechanics, group theory, and statistics now play an important part in chemistry.

To see how the results of the ΔH calculation help in understanding the molecular interaction that causes solid compound formation, we will return to the (hexafluorobenzene + benzene) phase diagram and describe the molecular arrangement that leads to the formation of the solid addition compound.

Benzene and hexafluorobenzene consist of flat hexagonal shaped molecules of almost equal size. Representations of their structures are shown in figure 11. In each molecule, the six carbon atoms are in a hexagonal ring, and each carbon atom is attached to a hydrogen or fluorine atom, depending on whether the molecule is benzene or hexafluorobenzene. In each instance, the molecule is flat with all the carbons and (hydrogens or fluorines) in the same plane. As shown in the top representations, donut-shaped rings of high electron density are present above and below the plane of the molecule. Organic chemists usually use the more simplified representations shown in the figure. The circle inside the hexagon

(SOLID + LIQUID) PHASE DIAGRAM
FOR THE
(HEXAFLUOROBENZENE + BENZENE)
SYSTEM

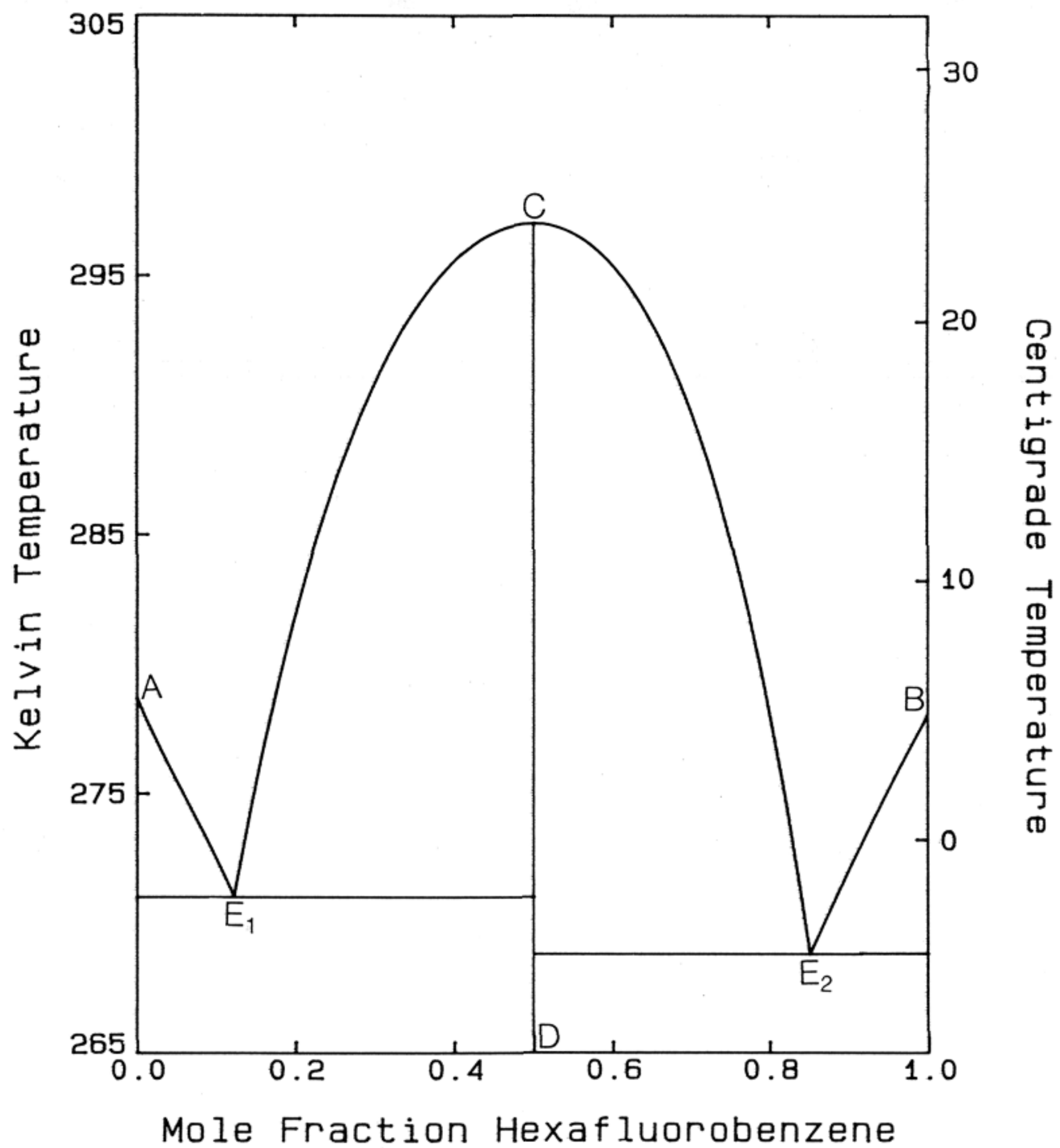


Fig. 9. (Solid + liquid) phase diagram for the (hexafluorobenzene + benzene) system. A solid molecular addition compound forms with melting temperature given by point C.

(SOLID + LIQUID) PHASE DIAGRAM
FOR THE
(TITANIUM TETRACHLORIDE + ANISOLE)
SYSTEM

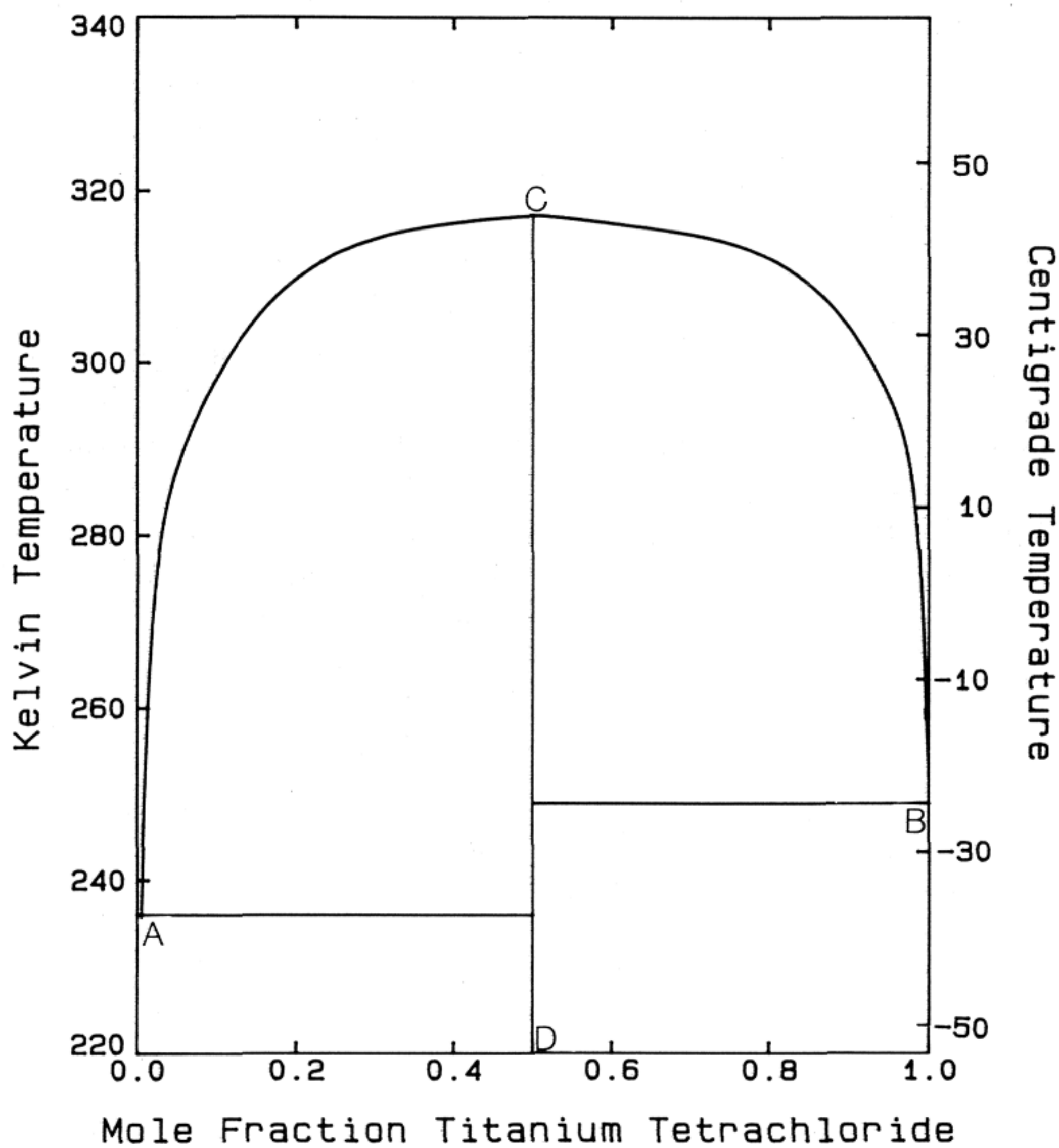
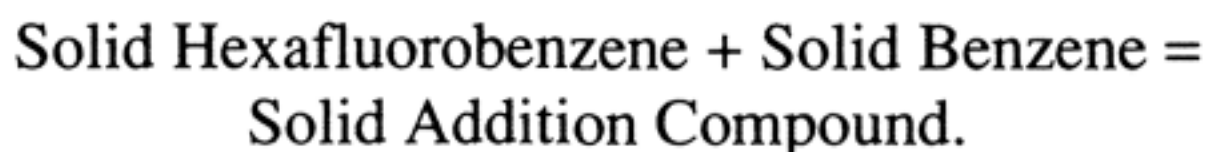


Fig. 10. (Solid + liquid) phase diagram for the (titanium tetrachloride + anisole) system. A solid molecular addition compound forms with melting temperature given by point C.

depicts the ring of high electronic charge. As we saw earlier, hydrogen attached to carbon is often omitted from the structural formula, as shown in the very bottom representation for benzene.

X-ray diffraction measurements have been made on the (hexafluorobenzene plus benzene) solid addition compound to determine its structure.⁹ This is a very difficult system to study by this method and the results are not definitive, but a good interpretation is that the molecules mix in the solid to form alternate layers of benzene and hexafluorobenzene with these alternate layers rotated. This arrangement is shown in figure 12. In (a), the benzene molecules, represented as hexagons, are arranged in a flat layer. In (b), a hexafluorobenzene molecule, represented by a darker hexagon, is placed on top of the benzene layer in a rotated position. In (c), a complete layer of hexafluorobenzene is in place on top of the benzene layer.

To build the crystal, a third layer of benzene molecules is added, which is a repeat of the first layer, followed by a fourth layer of hexafluorobenzene, which is a repeat of the second layer. The result of this stacking, which continues both horizontally and vertically, is a solid containing equal amounts of the two components, which forms simply as a result of favorable packing. No strong energy of interaction is required to hold the molecules together. The energy calculation supports this conclusion. The reaction, an example of the general reaction given earlier, is



For this reaction, we calculate that $\Delta H = 0.88$ kJoules/mole, which is nearly zero.¹⁰ Since ΔH nearly equals the change in energy, there is essentially no energy stabilization.

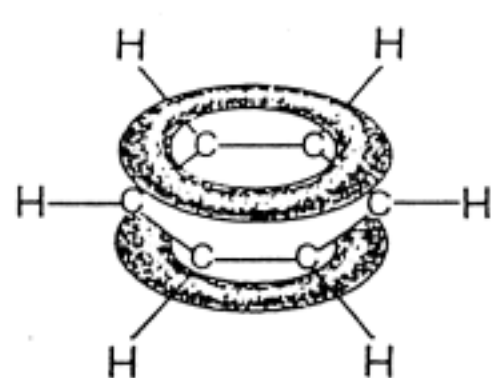
Chemical reactions such as this one for the formation of the (benzene + hexafluorobenzene) molecular addition compound are often described as entropy driven. The reasons for this description are as follows. The free energy change ΔG for any reaction is given by the equation

$$\Delta G = \Delta H - T\Delta S$$

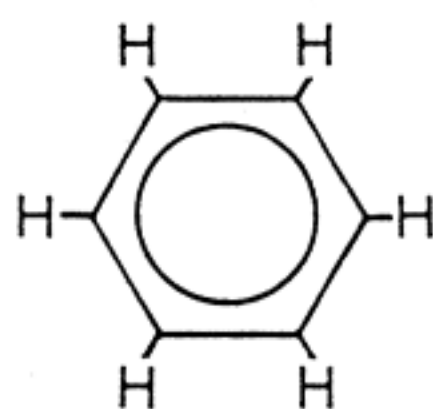
where ΔH is the heat, ΔS is the entropy change and T is the Kelvin temperature. From thermodynamics we know that ΔG must be negative for a reaction to take place. In our process, ΔH is nearly zero and hence does not contribute significantly to ΔG . But ΔS is positive because entropy is a measure of the disorder in a system, and the mixing of the components in forming the addition compound increases the disorder and hence the entropy. Since ΔS is

STRUCTURES OF BENZENE AND HEXAFLUOROBENZENE

Benzene



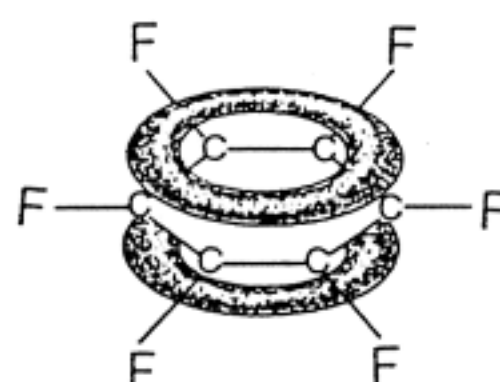
or



(or)



Hexafluorobenzene



or

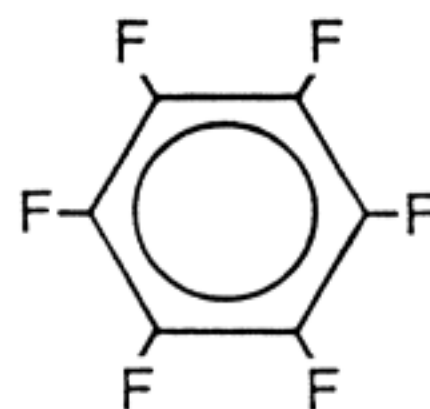


Fig. 11. Molecular structure of benzene and hexafluorobenzene. Both are flat hexagonal shaped molecules.

BUILDING THE (BENZENE + HEXAFLUOROBENZENE) ADDITION COMPOUND

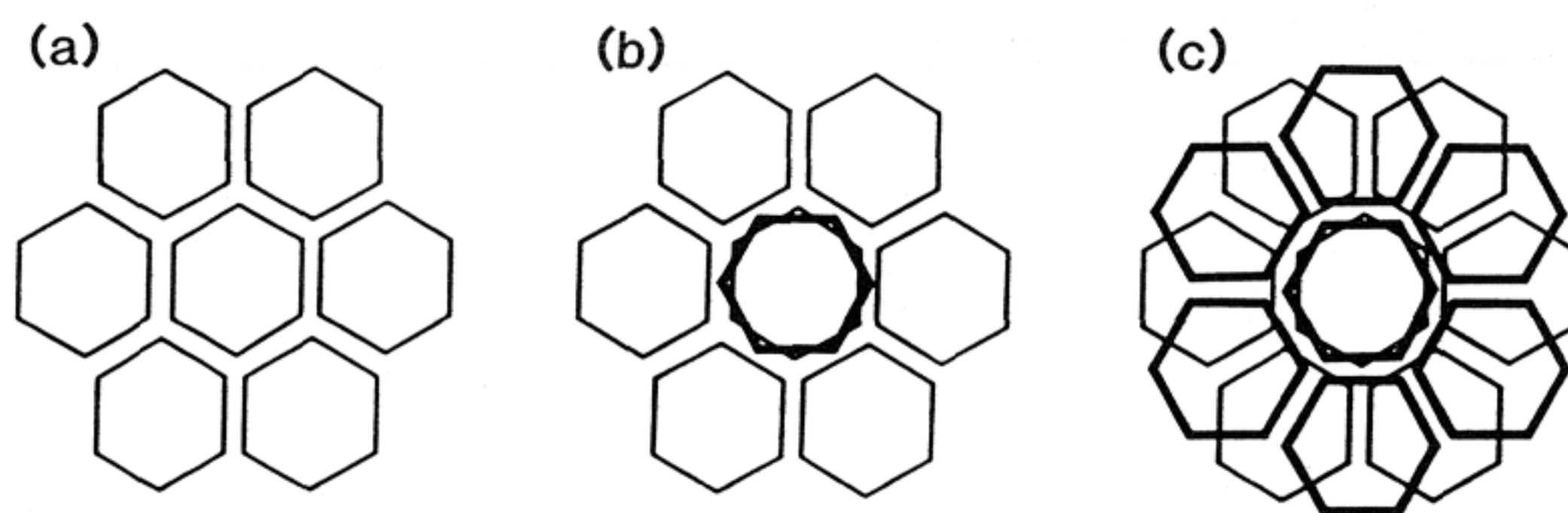


Fig. 12. Stacking of benzene and hexafluorobenzene molecules (represented by hexagons) to form the solid molecular addition compound: (a) layer of benzene molecules; (b) start of a layer of hexafluorobenzene molecules; (c) layer of hexafluorobenzene molecules on top of the benzene layer.

positive, ΔG is negative with ΔH equal to zero, and the compound forms.

The formation of the (titanium tetrachloride + anisole) solid compound in the phase diagram shown in figure 10 results from a much stronger interaction. The structures of titanium tetrachloride and anisole are shown in figure 13. Titanium tetrachloride exists as a tetrahedral molecule. That is, the titanium atom is at the center of a four-sided pyramid with the chlorines at the four corners. The anisole molecule contains a benzene ring attached to an oxygen that in turn is attached to a carbon and three hydrogens. Electron pairs on the oxygen, which are not used in bonding within the molecule, are represented by dots. They will turn out to be important as we describe the interaction leading to the formation of the solid addition compound.

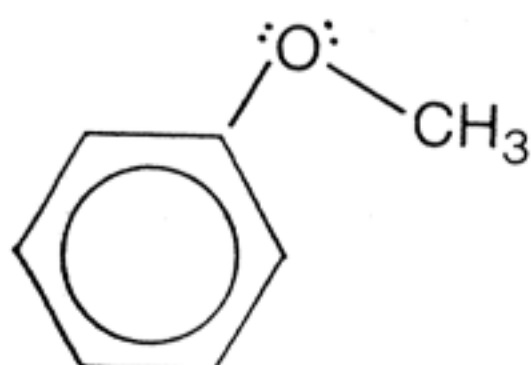
The formation of the (titanium tetrachloride + anisole) solid addition compound is interesting to observe. Both titanium tetrachloride and anisole are colorless liquids at room temperature. If an equal number of moles of titanium tetrachloride and anisole are mixed, a dark red solution forms that freezes to a dark red solid, which is the addition compound. This solidification happens at room temperature because we see from figure 10 that the addition compound freezes at about 44°C or 317 K , which is above room temperature.

The formation of the (titanium tetrachloride + anisole) solid addition compound is explained as resulting from a Lewis acid-base interaction as shown in figure 14. The tetrahedral titanium tetrachloride molecule shown on the left is a Lewis acid or electron acceptor. The molecule can accept a pair of electrons from a Lewis base or electron donor to form a complex. In our case, the oxygen in the anisole, also shown on the left in figure 14, has extra electron pairs and is the Lewis base. When the compound forms, the oxygen shares a pair of electrons with the titanium to form a titanium-oxygen bond. The structure shown on the right in figure 14 represents the addition compound. It has the titanium at the center of a trigonal bipyramid, which is a six-sided structure made by putting two three-sided pyramids base to base. The four chlorines and the oxygen from the anisole are bonded to the titanium at the five corners of the bipyramid.

In addition to the phase equilibria measurements, we also made x-ray crystallography and infrared spectral measurements on the addition compound.¹¹ These measurements show that the oxygen from the anisole is bonded directly to the titanium from the titanium tetrachloride, which is a necessary condition for our explanation of the bonding to be acceptable. The heat effect also

STRUCTURES OF ANISOLE AND TITANIUM TETRACHLORIDE

Anisole



Titanium Tetrachloride

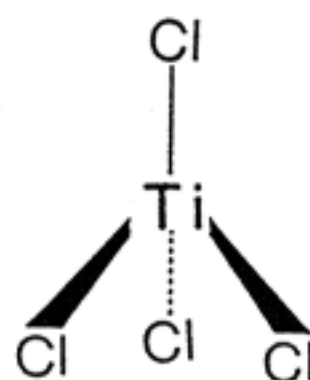


Fig. 13. Molecular structures of anisole and titanium tetrachloride. Anisole contains a benzene ring with one of the hydrogen atoms replaced by an -OCH_3 group. The dots represent pairs of electrons. In titanium tetrachloride, the titanium atom and the upper chlorine atom are in the plane of the paper. The two outer chlorines below the titanium extend out of the plane of the paper while the chlorine at the end of the dotted bond extends into the plane of the paper. The result is a structure with the titanium at the center and the chlorines at the corners of a tetrahedron.

LEWIS ACID-BASE REACTION

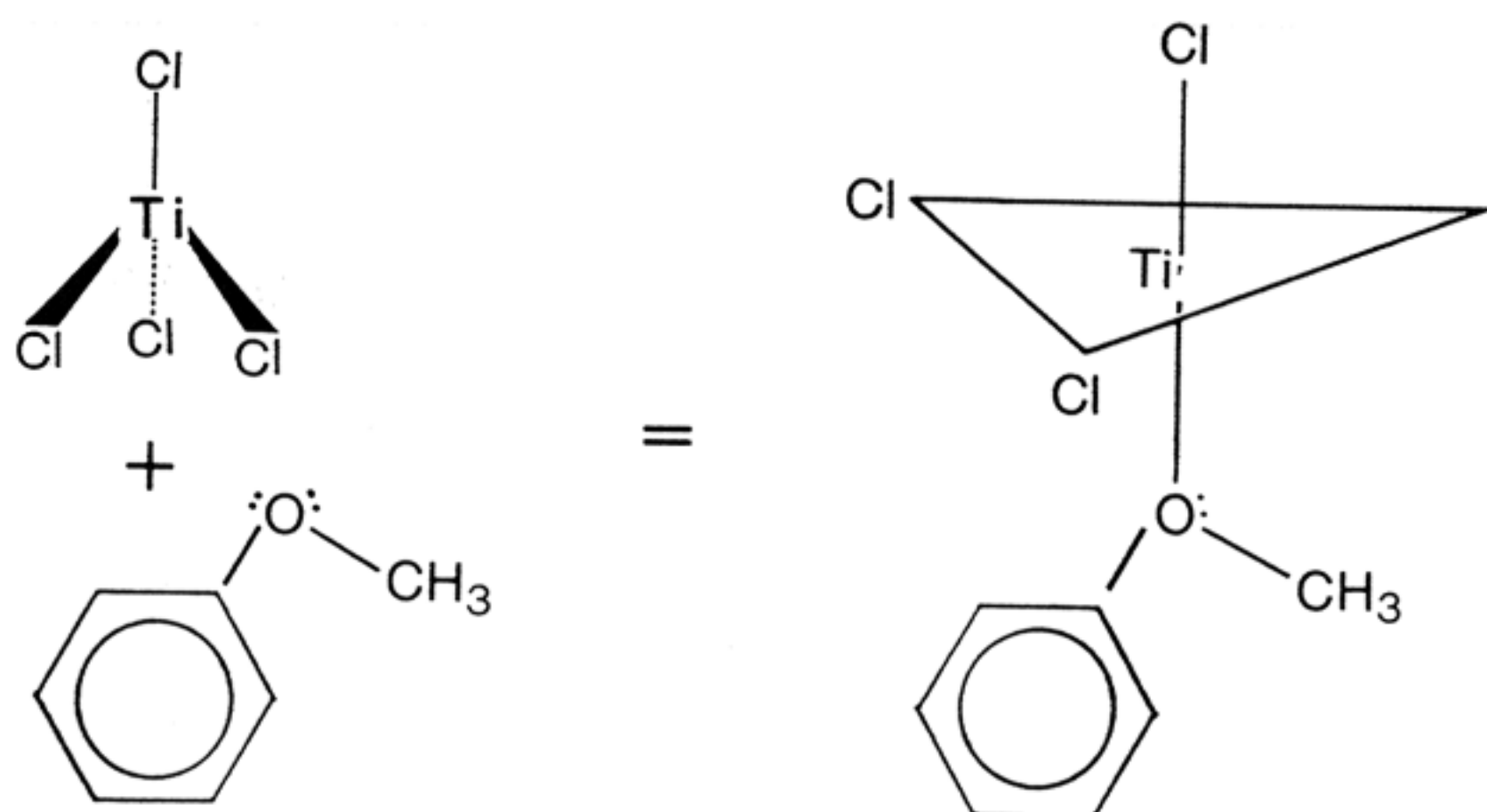
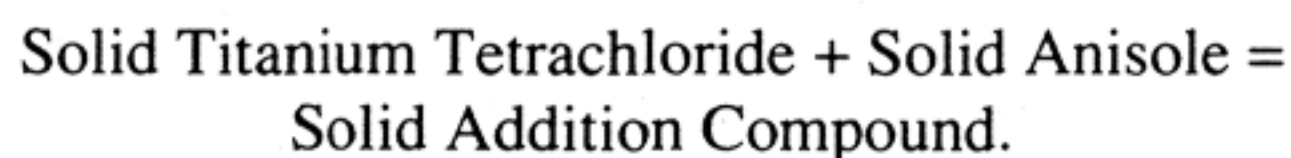


Fig. 14. Formation of the (titanium tetrachloride + anisole) solid addition compound. The titanium is at the center of a trigonal bipyramid, with four chlorines and the oxygen from the anisole at the five corners.

supports this explanation. Lewis acid-base interactions are strong, and we would expect a large lowering in energy and hence a large negative ΔH . The formation reaction for this system is as follows:



The calculation of ΔH gives a value of -44.27 kJoules/mole.¹² In other words, almost 45 kJoules of heat are released when a mole of this compound forms. This is indeed a large heat effect, and the energy is lowered by almost this amount when the reaction occurs. Reactions such as this one are described as energy driven. Again, the free energy change is given by

$$\Delta G = \Delta H - T\Delta S$$

and for the reaction to occur ΔG must be less than zero. Since ΔH is a large negative number, ΔG will be negative unless ΔS , the entropy change, is large and negative, and this is very unlikely. Most spontaneous chemical reactions are energy driven. Entropy driven reactions in which ΔH is zero or positive, such as the one described earlier for the formation of the (hexafluorobenzene + benzene) solid addition compound, are unusual.

I hope I have given you a glimpse into the world of phase equilibria. Let me assure you that many of the (solid + liquid) phase diagrams we have studied are not as simple as the ones described here. Nature in her perverse way often likes to complicate things by combining together in one phase diagram, solid addition compounds, solid phase transitions, metastable equilibrium, solid solutions, and so on. In such cases, the construction of the phase diagram becomes a real challenge. We must separate all of the melting points, eutectics, and metastable equilibria, as well as other features we haven't discussed, such as transition points and peritectics, to put together a coherent diagram that explains all of the observations.

As examples, figures 15 and 16 show the (solid + liquid) phase diagrams we obtained for mixtures of the alkali metals (sodium + potassium), and [N,N-dimethylformamide (DMF) + trichlorobromomethane (CBrCl₃)], respectively.¹³ In the (sodium + potassium) system, a solid addition compound forms, which contains twice as many sodium atoms as potassium atoms. This compound melts incongruently, that is by decomposition. When the addition compound is heated, it decomposes at the temperature given by line CD in figure 15 to a solid that is mostly sodium (composition given by point C) and a liquid with composition given by point D, which is known as the peritectic point. We will not

describe this interesting intermetallic compound, which is known as a Laves Phase. Details of its structure can be found in the literature.¹⁴ Solid solutions also occur in this system along lines AC and BF.

The (DMF + CBrCl₃) system (figure 16) is more complicated. An incongruently melting compound containing twice as many moles of DMF as CBrCl₃ forms at F, a congruently melting compound containing an equal number of moles of the two components forms at C, and a solid phase transition in the CBrCl₃ occurs at D. Eutectics are present at E₁ and E₂, and a peritectic occurs at F.

My research director at Berkeley many years ago was W. F. Giaque, a Nobel laureate in chemistry. He once told me that it was the unexpected that makes science exciting and that if things always came out as predicted scientific research would not be worth the effort. Each of the systems we have studied has been fun and exciting. Constructing a (solid + liquid) phase diagram is like putting together a picture puzzle without having a picture on the box to look at. Melting points are measured over the entire range of composition, along with eutectic and peritectic halts and solid phase transitions. Each piece of data adds to the picture, a picture that is not complete until the final piece is in place.

In one of my favorite "Wizard of Id" comic strips, the King asks, "Why is it that this country honors its athletes while men of science go virtually unnoticed?" The Queen then answers, "Did you ever spend an evening with a man of science?" I am grateful to those who have chosen to spend an evening with me.

(SOLID + LIQUID) PHASE DIAGRAM
FOR THE
(POTASSIUM + SODIUM) SYSTEM

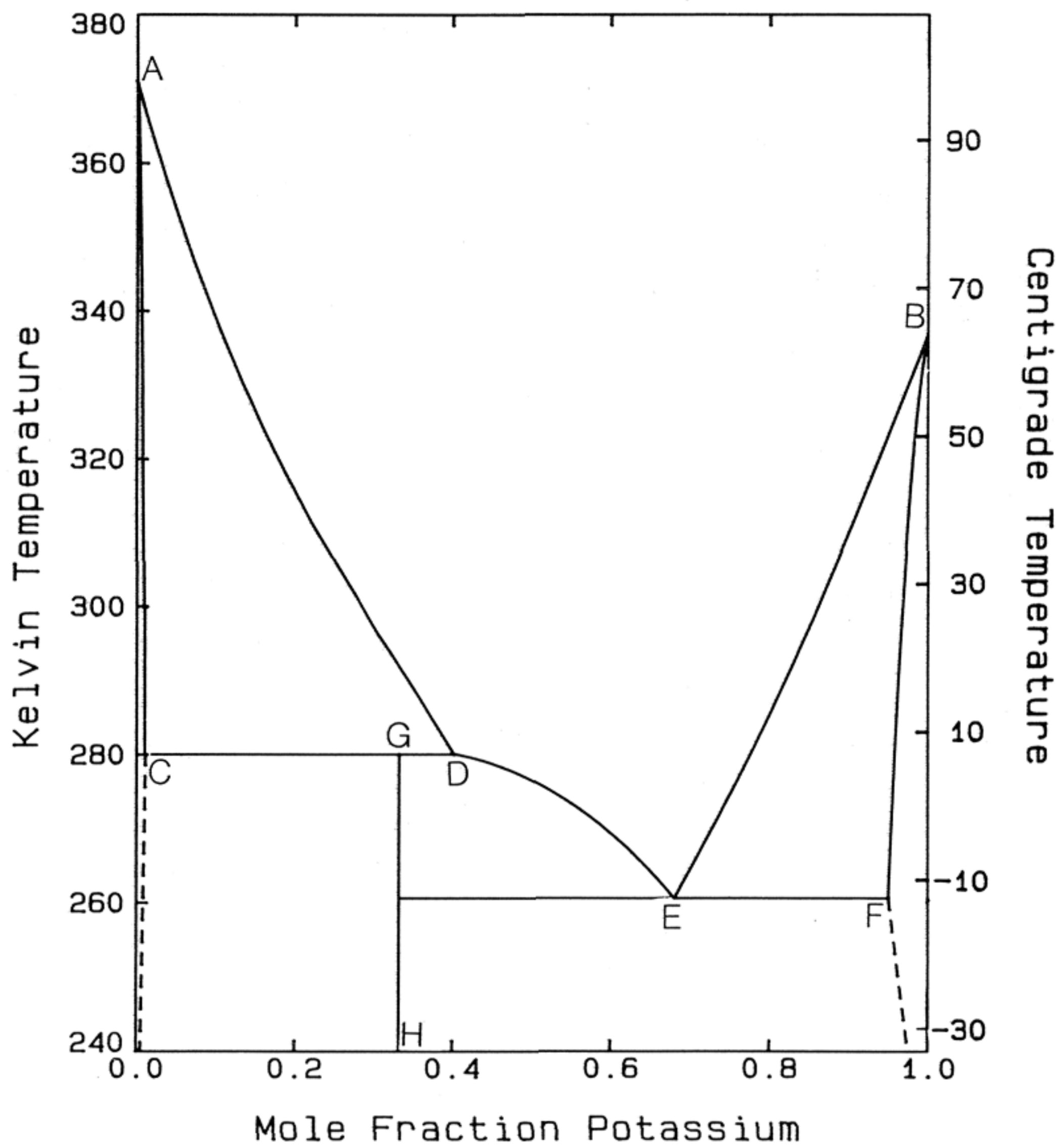


Fig. 15. (Solid + liquid) phase diagram for the (sodium + potassium) system

(SOLID + LIQUID) PHASE DIAGRAM
FOR THE
(DMF + CBrCl_3) SYSTEM

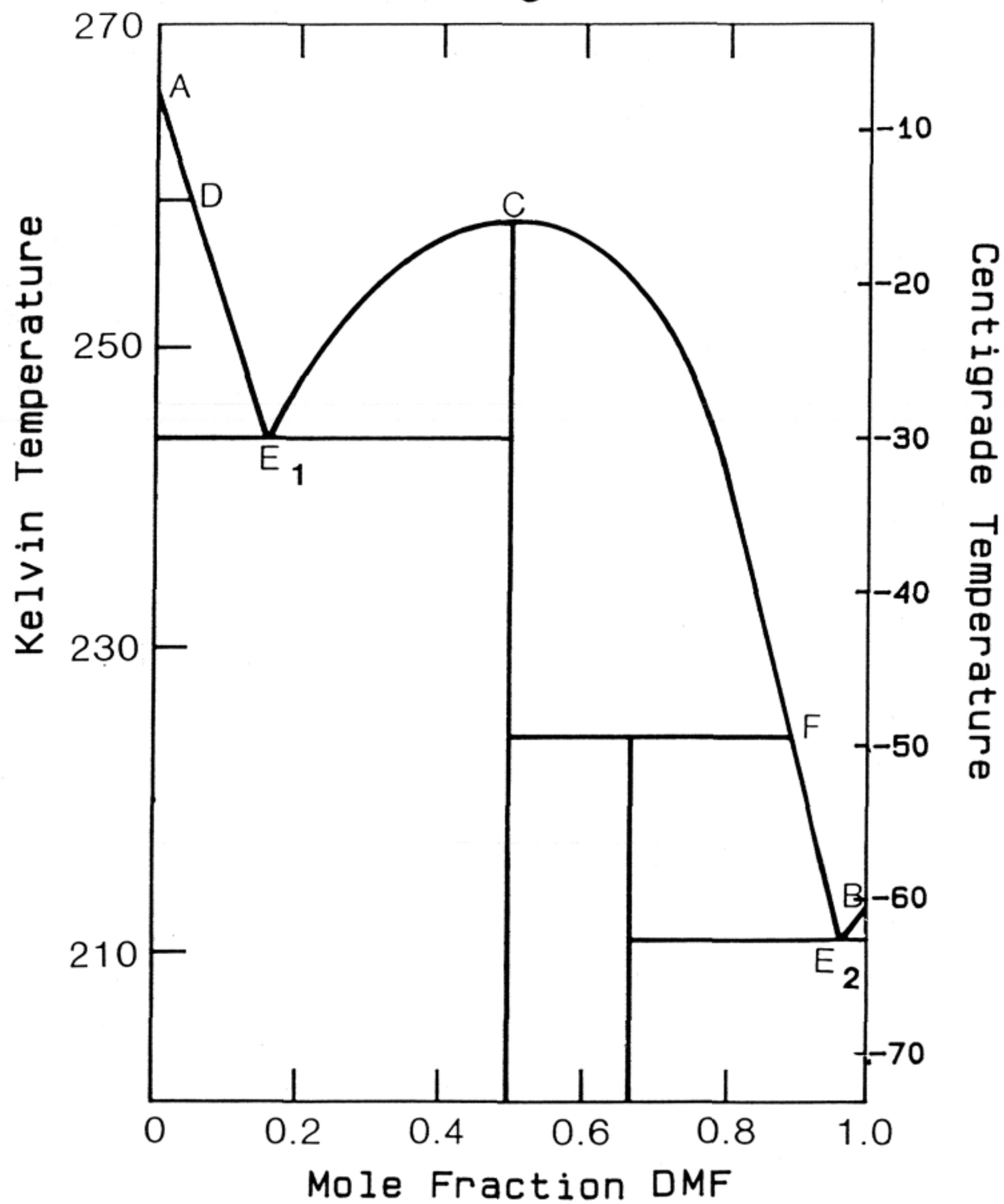


Fig. 16. (Solid + liquid) phase diagram for the [N,N-dimethylformamide (DMF) + trichlorobromomethane (CBrCl_3)] system

NOTES

¹For a description of the calorimeter Iduna, see J. B. Ott et al., "Excess Enthalpies for (Ethanol + Water) at 298.15 K and Pressures of 0.4, 5, 10, and 15 MPa," *Journal of Chemical Thermodynamics* 18 (January 1986): 1–12; for a description of other flow calorimeters, see J. J. Christensen, H. D. Johnston, and R. M. Izatt, "An Isothermal Titration Calorimeter," *Review of Scientific Instruments* 39 (September 1968): 1356–59; J. J. Christensen et al., "An Isothermal Titration Microcalorimeter," *Review of Scientific Instruments* 44 (April 1973): 481–84; J. J. Christensen et al., "Isothermal High Pressure Flow Calorimeter," *Review of Scientific Instruments* 47 (June 1976): 730–34; J. J. Christensen et al., "Isothermal, Isobaric, Elevated Temperature, High-pressure, Flow Calorimeter," *Review of Scientific Instruments* 52 (August 1981): 1226–31; J. J. Christensen and R. M. Izatt, "An Isothermal Flow Calorimeter Designed for High Temperature, High Pressure Operation," *Thermochimica Acta* 73 (February 1984): 117–29; J. J. Christensen, P. R. Brown, and R. M. Izatt, "An Isothermal Flow Calorimeter for High Temperature Aqueous Solutions," *Thermochimica Acta* 99 (March 1986): 159–68.

²Jay Purdy and Brian Neely were the students who made the heat of mixing measurements on (cyclohexane + acetonitrile), and Robert Harris made the (liquid + liquid) phase equilibria measurements. The paper describing the results is J. B. Ott et al., "Excess Enthalpies at 323.15, 348.15, and 373.15 K and (Liquid + Liquid) Equilibria for (Cyclohexane + Acetonitrile) at 0.4 and 15 MPa," *Journal of Chemical Thermodynamics* 20 (September 1988): 1079–87.

³Ibid.

⁴Ibid.

⁵The temperature measuring apparatus is described in J. B. Ott et al., "(Solid + Liquid) Phase Equilibria in Acetonitrile + Tetrachloromethane, + Trichloromethane, + Trichlorofluoromethane, and + 1,1,1-Trichlorotrifluoroethane," *Journal of Chemical Thermodynamics* 19 (1987): 177–84. Brian Woodfield was the student who assembled the apparatus.

⁶The (solid + liquid) phase diagram for the (ethylene glycol + water) system is reported in J. B. Ott, J. R. Goates, and J. D. Lamb, "Solid-liquid Phase Equilibria in Water + Ethylene Glycol," *Journal of Chemical Thermodynamics* 4 (January 1972): 123–26. John Lamb, the student who made the measurements, is currently a professor of chemistry and director of research administration at Brigham Young University.

⁷The formation of the (hexafluorobenzene + benzene) addition compound is described in J. R. Goates, J. B. Ott, and J. Reeder, "Solid + Liquid Phase Equilibria and Solid Compound Formation in Hexafluorobenzene + Benzene, + Pyridine, + Furan, and + Thiophen," *Journal of Chemical Thermodynamics* 5 (January 1973): 135–41. Joan Reeder, the student who made the measurements, is currently a faculty member at Eastern Kentucky University. The (titanium tetrachloride + anisole) addition compound is described in J. R. Goates et al., "Infrared and Phase Equilibria Studies of Intermolecular Compounds of Titanium Tetrachloride with Several Aromatic Hydrocarbons and Ethers," *Journal of Physical Chemistry* 68 (September 1964): 2617–21. Nolan Mangelson and Reed Jensen were the students who performed the original experiments with titanium tetrachloride. Nolan is currently a professor of chemistry at BYU, and Reed Jensen is an associate director of the Los Alamos Scientific Laboratories.

⁸Summaries of the method for calculating ΔH for the formation of molecular addition compounds from the components along with the results of this calculation for a number of systems are given in J. R. Goates et al., "(Solid + Liquid) Phase Equilibria for (N,N-dimethylacetamide + Tetrachloromethane): Enthalpies of Melting of Pure Components and Enthalpies for Formation of Molecular Addition Compounds from Phase Equilibria," *Journal of Chemical Thermodynamics* 19 (January 1987): 103–7; and S. R. Goates et al., "Thermodynamic Stability of Solid Intermolecular Compounds," *Journal of the Chemical Society, Faraday Transactions I* 83 (1987): 1553–58.

⁹J. S. W. Overell and G. S. Pawley, "An X-Ray Single-Crystal Study of the Molecular System $C_6F_6 \cdot C_6D_6$," *Acta Crystallographia B* 38 15 (July 1982): 1966–72.

¹⁰See J. R. Goates et al., "(Solid + Liquid) Phase Equilibria for (N,N-dimethylacetamide + Tetrachloromethane)," and S. R. Goates et al., "Thermodynamic Stability."

¹¹See J. R. Goates et al., "Infrared and Phase Equilibria Studies"; and R. J. Jensen, "Thermodynamics of Charge Transfer Complexes" (Ph.D. diss., Brigham Young University, 1965).

¹²See J. R. Goates et al., "(Solid + Liquid) Phase Equilibria for (N,N-dimethylacetamide + Tetrachloromethane)"; and S. R. Goates et al., "Thermodynamic Stability."

¹³J. B. Ott et al., "Solid-liquid Phase Equilibria in the Sodium Potassium System," *Transactions of the Faraday Society* 65 (1969): 2870–78; J. R. Goates, J. B. Ott, and D. E. Oyler, "Intermolecular Compound Formation in Solutions of N,N-dimethylformamide with Carbon Tetrachloride and Several Related Substances," *Transactions of the Faraday Society* 62 (1966): 1511–18.

¹⁴See, for example, F. Laves, "Factors Governing Crystal Structure," in *Structure of Metals*, 3d ed., ed. C. S. Barrett and T. B. Massalski (New York: McGraw-Hill, 1966), 129–43. Other references describing the structure of this compound are R. L. Berry and G. V. Raynor, "The Crystal Chemistry of the Laves Phase," *Acta Crystallographia* 6 (1953): 178–86; C. S. Barrett and T. B. Massalski, ed., *Structure of Metals, Crystallographic Methods, Principles, and Data*, 3d ed., rev. (New York: Pergamon Press, 1980), 256–59.

Remembering the Stop by a Lake

First, the words behind which lies the scene;
Recorded wind that fills
The room; water, sand, eroded hills;
The disappearing screen.
Hanon next, the lens beside the shore,
A stepping to the land that lives between
Silver and bright air.
Children's cries within the wind . . . , the car,
And voices leading over waves and swells.

Now a second labor draws around
The child as words surround
And straiten fire that it may have no end
Upon the textured land.
Wet sage and sunset, the wind's sound,
The sea, and all roads look to home where peach
Leaves vibrate on the wind,
The trill made flesh.

—Kathryn R. Ashworth

The Civil War Poems

Clinton F. Larson

To Bry and Ann Nelson



Pickett's Charge area looking west toward Virginia Mountain, Gettysburg, Pennsylvania
(photograph from Lane Studios, Gettysburg, Pennsylvania)

A Leaf: A Benediction

A leaf may fall,
Alight, and burn through eternal Fall.
Soldier, rise into eternal Spring,
The blue and deathless calm.

My Peace I Give unto You: Epigraph of the Savior

All those who remember
The peregrinations of history,
Forget forget forget.
Only I may retain
The glory, and the glory of pain.

Dayspring at Fort Sumter

The brisk morning of luminous bays, reeds, and lace in water,
Mysteries requisite in the slopes of evergreen, inklings
Of jetsam and plaitings stainless and floating.
You are there from the upper air of the windfall, where
Clouds cascade from the upper air into twilight.
Gray prince, you shape the evanescence that whispers
Its light above the dark ship and primes the shadow
Veering from it into reeds and leaves of the sea.
I move under leaves of the shore, rustling
In the diamond and emerald mists to find the shipline
Halyard. As if the bridgehead of darkness, it stands
Against the green of shadows, sombre and stolid,
The rapprochement of eternities, solace of waves
Beyond, in bays of winds, where sails rise from the lines
Of the horizon shielding the distances, and the brooding
Sound: paradise of seas, shining the liturgy
Of your devotion, around the peninsulas of twilight,
Our mortality.

Apocalypse

I disclose the windward darkness
In the phosphor of a glimmering;
The word pales and burns, aerating
Heat that folds and trembles
Like silk against a spire of wind.
It spreads, wavering,
And through it the image stirs,
Tropical and warming:
Hyacinth and the lustre of tamarisk
Against the flowerless grey.

The Turning Point: General Stonewall Jackson at Chancellorsville

Strange skirmishes into Virginia, secession
The cause. The Potomac the watery border,
And the South a strange land, another order,
And Stonewall moving like mist or recession,

Clouding vision, querulous, waiting, like the hint
Of probability, poised somewhere in a dark glen,
His black stallion rustling leaves where the wren
Barely sings, quieted. A burnished sabre's glint

Or wink of firefly burned the morning mist
Into small fires of sun across a quiet field
Open to the day. Who, riding there, must wield,
Unrestrained, the gloved and practiced fist?

The quiet, sunlit paths around the main salient
Traveled as if by wraiths of butternut and gray,
Or by what dim soldiery? Early dawn might play
Brightly over pastel but brighter over the alien

Blue array. Stonewall coursed near the ground
Of war, forested vales and meadows, his campaign
Gathering, waiting. Then instinct, like champagne,
Gleamed, heady and clear: now. And the sound

Of drums and cavalry began before the driving
Noon of light. It could not last, swift firelight
Sweeping in. Some erring fusillade could slight
All but the countermeasure and his striving.

So he lay, his spirit grazed by the thought of trying,
And even the admissible gray throngs must stop
And inquire: What was he, glittering, new? What fought
War was that he helped to end, the end his dying?

Shenandoah

The blue ridge remains as dark as evening
In the afterglow. The gray line vanishes
North into pallor where mist vanquishes
The memory of Antietam Creek. The leavening
Of history is like a drift of snow ravening
Light that must remain to shine. Who languishes
In a creek, aglow, reddening, as his wishes
Calm themselves into tears? Convening
Blood, ardent across the sodden wool
Of his bivouac, is crumpled still, unresponding
To the heaving twist of reaching down into the pooling
Rill where his feet remain. Generalissimo, full
Of salients of secession, coordinate
The sweep and thrust of columns as, inebriate
With advantage, you seek out Gettysburg.



General Robert E. Lee, equestrian statue, c. 1917, Gettysburg, Pennsylvania. This statue was erected near the site where General Lee met the returning veterans of Pickett's Charge (photograph courtesy Gettysburg National Military Park, National Park Service).

The Battle of Gettysburg

GENERAL LEE

Commander of the Army of Northern Virginia

GENERAL MEADE

Commander of the Army of the Potomac

GENERAL LONGSTREET

Southern commander under General Lee

GENERAL PICKETT

Leader of the assault on Cemetery Hill

Lee: Soldiers of the South, Jackson rests in Paradise!
Let your voices rise like the crest of our victory!

(A general shout.)

Meade: (In darkness.) General Lee. General Robert E. Lee!

Lee: Who speaks?

Meade: A voice from across the fields.
It is the third of July.

Lee: Who is it?

Meade: The sinew, the resolution of the North.

Lee: Who?

Meade: Meade, of the Army of the Potomac.

Lee: Then I am hearing things most easily.
You stand on Cemetery Hill, a horizon from here.

Meade: You know it is I, General Lee. We have dealt
War across the board of destiny until
We are as familiar as friends. I have felt
Your demeanor in your cavalry and in the thrusts
Of your infantry.

Lee: (Gallantly.) The first and second of July!
General Meade, I am worn like the mask of death,
But I shall say, though your voice is the voice
Of death, that I am at your service, sir, whatever
This day may bring. But, sir, you know
That I have come here with 75,000 men in grey.

Meade: And you know, sir, that I have appointed General
Custer
To guard my flank, which you have very nearly turned.

Lee: So we speak from the order of our conscience
Of war? You, who from across the ridges,
Speak with your guttural cannon, waiting
For the wheeling maneuvers of cavalry that daybreak
brings?

Meade: We speak out of your voiceless consciences
That have brought us to this day.

Lee: So be it,
If it will bring us more closely to the issues.

Meade: General Lee, you have your preparations,
And I have mine, each contriving his strength
From the zeal of his cause. We shall speak again.

Lee: No doubt of it, though what we have said makes me
The more somber.

Meade: Because of knowledge I have given you?

Lee: No, for I have seen that you have but a simple recourse
Here, as simple as mine is complicated.
You have only to defend.

Meade: Yes, my strategy is as simple
As my cause. Forgive me.

Lee: By your leave, sir,
Forgive me! My generals of the Confederacy wait.
Be ready for us today.

Meade: The fields before us
Are as bright as the hour. What time is it?

Lee: Ten. I think, ten.
(He turns.) General Longstreet!
May I see you, sir? Where are you?

Longstreet: General Lee,
Here at your side.

Lee: Do you have the time?

Longstreet: Ten-thirty, sir.

Lee: And where is General Jackson?

Longstreet: Do not taunt me, General.

Lee: But where is he?

Longstreet: At Chancellorsville. You know at Chancellorsville.

Lee: The whip of my right arm is dead at Chancellorsville. He cannot come. What is my arm without him?

Longstreet: Ask *me*, General. What is your command For the Army of Northern Virginia?

Lee: Not the surprise Of the Union's Iron Brigade in the underbrush.

Longstreet: We have word that General Reynolds of the North is dead.

Lee: And so have I. And who is to replace him? They improve in death, and Stonewall died Like the opportunity of complete victory, And there are none to replace him, not with his zest For routing the black brigades of the North.

Longstreet: Sir, give me your order! Jackson cannot ride back From the grave!

Lee: Am I given over to your indecision? Stonewall *acted!*

Longstreet: In the name of our cause, General, What do you want of me? I am Longstreet, The scholar of your campaigns! There is nothing I would not do for the South!

Lee: Then why was it Not done yesterday or the day before?

Longstreet: Yesterday And the day before lie strewn before Cemetery Hill!

Lee: And that is our horror—that we do not break their lines. Somehow, it does not happen. . . .

Longstreet: Let us begin The cannonading at noon, directly into the center Of their line, and so break them that our infantry May walk through them and north of Washington.

Lee: So we have determined—and so I hear my plan
From a schoolboy at my own feet! Longstreet,
I beg of you, let me see the touch of my Stonewall
In you and an interest only in the report of victory.
This is what I want; this is what I want. . . .
Meade, Meade, you cannot know where we will
strike,
But you feel our presence slowly . . . If we could only
strike
Before you know the least of our intention, then—
then . . .

Longstreet: General, what is your command?

Lee: Must I think for you,
Longstreet? Ride into their center on Cemetery Hill.
We have tried the right and left, so they will not expect
The logic of the center, the maneuver that divorces
them
From their will to continue.

Longstreet: Many of our command
Are lost or dead.

Lee: You avoid the presence
Of my command, listless and waiting. The center
Is your place. Why now do you divert the air of my
command?

Longstreet: Sir, it is only that our young have died right and left
Before the hill that rests before us as sure as night.

Lee: They died as Reynolds died, under the banners of their
glory.
What can we say more than that, that we shall win
This day and make their glory sure?

Longstreet: We cannot say. . .

Lee: But we must try, here at Gettysburg, the work
Of our thrust from Sumter years ago.

Longstreet: Hood did not turn
Their flank only yesterday, and our effort was forlorn,
Warren of the North the spirit of defense. His dress
sword
Dangles blood on our right; the line is stabilized.
Sedgwick and the Sixth Corps settle there and wait.

Lee: Why do you dally over the attrition we knew would
come?
Only at Agincourt in France was the victory consum-
mate,
The only time in history when the battle went perfectly
According to design. But if we do not act,
Impotence will be the habit of our mind, and then
We shall retire from here in blood, hapless and wan-
dering.

Longstreet: Last night Gregg's cavalry rose up like apparitions
Grisly with the memory of battle, and we could not
take
The western peak. What is the aspect of their terror that
turns
Our resolution into the mist of memory?

Lee: Take the center.

Longstreet: Shall I begin? When shall I begin? Will Pickett go?

Lee: Though Stuart sleeps in a despair of weariness,
He is as resolute as you are questioning. Yes, Pickett
Is the corps d'élite. He will go, and I pray for your
support.

Longstreet: And so it is committed, the Virginia division.

Lee: Longstreet, those troops on the hill facing us
Have fought the flooding weariness of marching here
And cannot stay the cannon and the waves of grey
That we shall serve them in a little space. Their wings
Are staunchly turned, though they have held, and I
know
Meade has furnished them support from his center
line
That I have said will fail today. Pickett will have them
On his blade, and victory! Then peace will be upon
My decision that I chose the command of Virginia
Rather than the corporal aegis of the North.

Longstreet: Sir, their artillery rests behind the stone, in the center.
I doubt . . .

Lee: What forges doubt but dissolution?
You have known the gentility we follow in the South,
The graceful years of ambiance and charm . . .
I dream of it.

Longstreet: But this is Meade, whose factory
Is war, undreaming war. The cannon there . . .

Lee: Attack!

Longstreet: I give you this: the meadows dream,
Dotted with our dead. My voice is the voice
Of muskets cracking virulence into wounds!

Lee: The sun rises to Zenith. Attack! Where is Pickett?
Tell him.

Pickett: (Approaching.) General Lee? General Longstreet?
My division of Virginia is ready for the field we see.

Lee: You divine my reasoning, General? You see,
Longstreet,
That Pickett is my General Jackson now!

Longstreet: This is not
The device of strategy, but frontal war. What do
cannon
Know of gallantry?

Lee: (Turning away.) General Pickett, General Longstreet
Will tell you what to do.

Pickett: General Longstreet?

Longstreet: My commander tells me where the victory lies,
In the center where the cannon are. Avoid them as you
can,
But lead your men across that space inured with
visions
Of the real. The meadows flicker the appalling bright-
ness
Of time forgotten, an injunction that holds us hard
against
The part that we lose in the Confederate grace
Of Richmond.

Pickett: General?

Longstreet: This is all we know
And so perhaps deserve. Attack!

Meade: (Distantly.) Your horses toil uselessly,
Arranging your cannon in the silence of an error.
Avoid me now. Hancock rules the center with his
infantry.

Pickett: Who is that?

Longstreet: The voice of deception. Attack! Perhaps
Deception. Of course, deception! Would Meade seem
Exactly as he is? No. That cannot be. But if it were . . .

Pickett: General?

Longstreet: Attack! He is the deceptor. Lee is right.
I am swept by him into the vast design that cannot fail.
And yet, romance . . . the South of porticos and the
summer
Of fields in flower . . . but it is not real! To save it,
Go! Attack and save what never was, for this is real,
That we can be of use and die!

(The sound of many cannon firing.)

Pickett: Forward!

(The order, repeated by junior officers, seems to echo
in the distance. He leaves.)

Voice in the distance: See you in Washington!

(There is a roll of drums, then the sound of thousands
marching. In the distance, the music of "Dixie"
begins.)

Lee: (Turning to Longstreet.) There they go, the flower
Of the Confederacy! Jubilant as the sun! Ah, their
glory!
See them, Longstreet! There is Pickett, his auburn
Demeanor ahead of them. The center of Meade's line,
The militia he has found, will sag and collapse
Before those grey lines that march so quietly there.

Meade: Not militia. Black Hancock and the Second Corps.

Lee: What? Longstreet, what did you say?

Longstreet: It was not I.

Meade: It was I, Meade of the North, again. I see the waves
Of grey begin. Do not come.

Lee: General Meade, they come,
The honor of the South in their banners!

Meade: (Aside.) Hancock,
Take your position. You are the pawn of my might,
My resolution to hold.

Lee: Hold? Your center is weak.

Meade: No. My mettle is there, the terror of the black legions
Of freedom. But the waves of grey begin.
We will not rout again; Mannassa is a memory.

Lee: You have no cannon, and who can stand
Against the hurrah and call of those grey lines
That carry with them the honor of Richmond?

Meade: My cannon are here, the rows of them, cooling
From their first assault.

Lee: What?

Meade: Colonel Lee,
Who stood at Harpers Ferry, I am not the wish
Or sleight of your strategy. Your desire is glory,
But only desire. You have wished for a victory
That cannot be, whatever your valor. You are the
cavalier;
I the watchman of the pain I deal. I cannot fail
In Pennsylvania: there is no cushion here against the
will
Of God that holds for liberty.

Lee: We must be free.

Meade: Free
Only under the agreement to be free, with us.
I am your brother of the government of the United
States.
Let the bugle sound, and call them back!

Lee: I cannot.
We must try the strength of such duplicity. Honor!

Meade: We must find in that the darker scene of graves against
the wall
Where resolution ends. Stop them! They are of our
Virginia,
Where Washington and Jefferson kept the Union as a
dream!

Lee: Are we a dream of failure? I am the decision of my
loyalty.

(The lights go down on Lee and Longstreet and come
up on Meade.)

Meade: Valor wings grey
In the sky, and the span of knowing
The black ascent of time crowds like a claw
And tears in me.
Splendor and terror strive, shine with the midday
Clarion and the far roll of drums.
The grey lines wave before the field
And skeletal grain, then march and rise to me,
My cannon their shore of sound.
Blind with wrath, Jehovah stands in me and feels them
come,
Trembling in the immanence of their charge.
Line on line they come, like the fallen cohorts of
heaven;
They offer themselves on the field, nearer,
Steady as their cause.

(There is a burst of cannonading.)

The cannon twist and cross
Their lines like fingers of an automatic hand.
But in the fright of death, I deal paralysis
Like snow on still and vacant fields.

Where in the source of my fear will I find
The mortal command?
Where in the orders of God will I find
The gash of faces open with the white hysteria
That I must make?
Bright as the banner we followed here,
We, faltering, find war a myth of souring mouths
Declaiming, here and there, the valor of dust.
For this is real, real as any wild dream,
And, taut as I am, they come on and on,
Rising to our ridge.

My arm signals,

Then falls,

(There is a great burst of cannonading and a sound like
the ripping of paper.)

. . . numb in its sleeve from the wish
To hold the fire that rides
Their broken line and blows them airily in mounds
Of iron, cloth, and bone.

(The anguished cries of the dying.)

The gusts of smoke
Hush their dying cries for peace,
But ever in my living grave
I rend the clods of flesh that bury me.

Lee: (In the darkness.)
Armistead is breaking your center!

Meade: And I have ordered
The counterattack. . . . Hall's New Englanders wheel
and charge.
The crest shudders and falls. Armistead is dead!

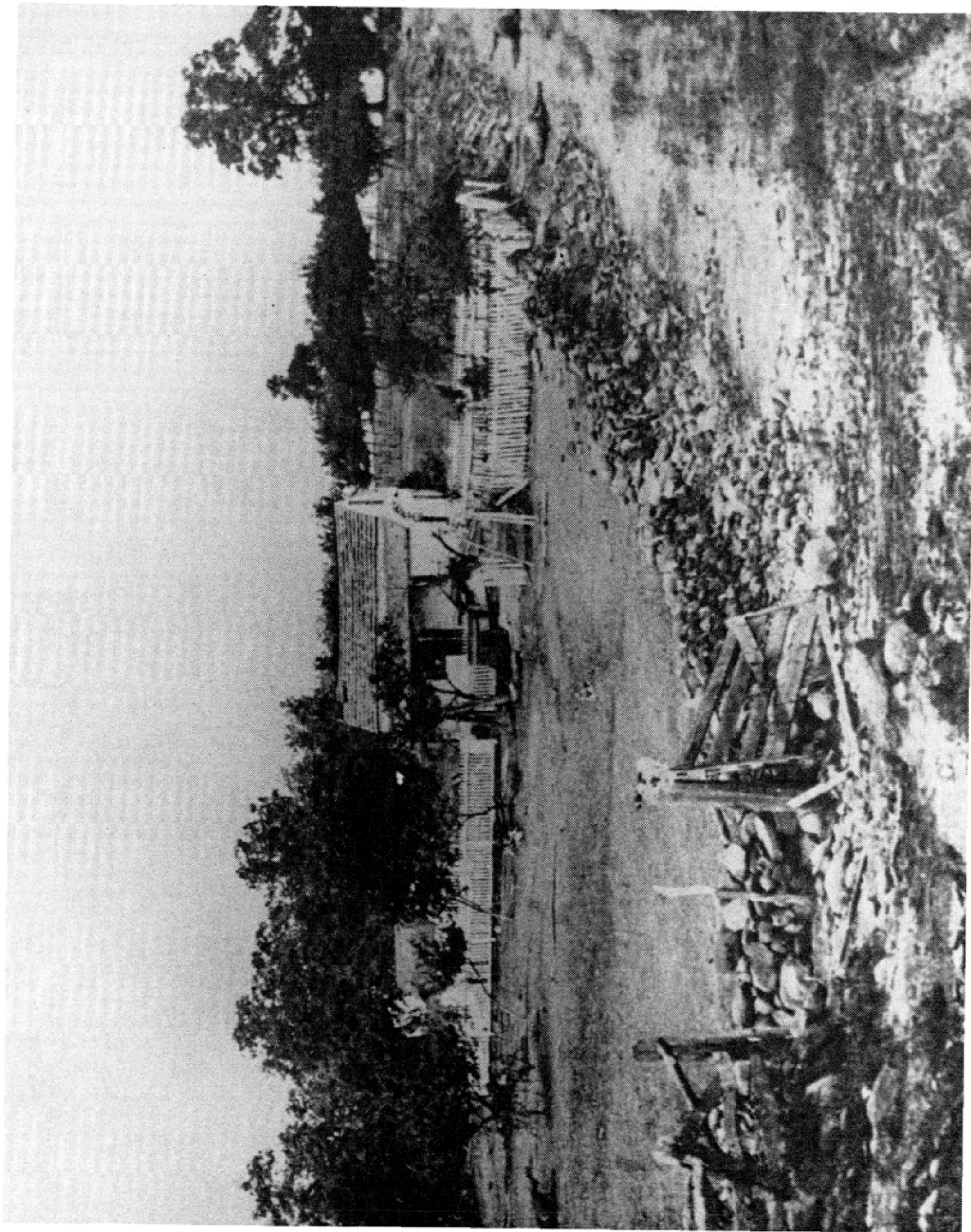
Lee: Armistead? Longstreet, his position swarms
With the hunched infantry of the North! You were
right
In the cold measure of their strength!
This is a strength I cannot know! Meade,
It is not in you; the fury of hell is in them
Out of a tall righteousness I cannot fathom.
They take us down and down, and our banners fall!

Meade: No, it is not in me, but in the commander
That broods in Washington, who was born in Illinois.
He is the arm of iron sinew around whom
We bustle, officious for his will that does not falter.
Lincoln! Lincoln! Who makes our day but he?

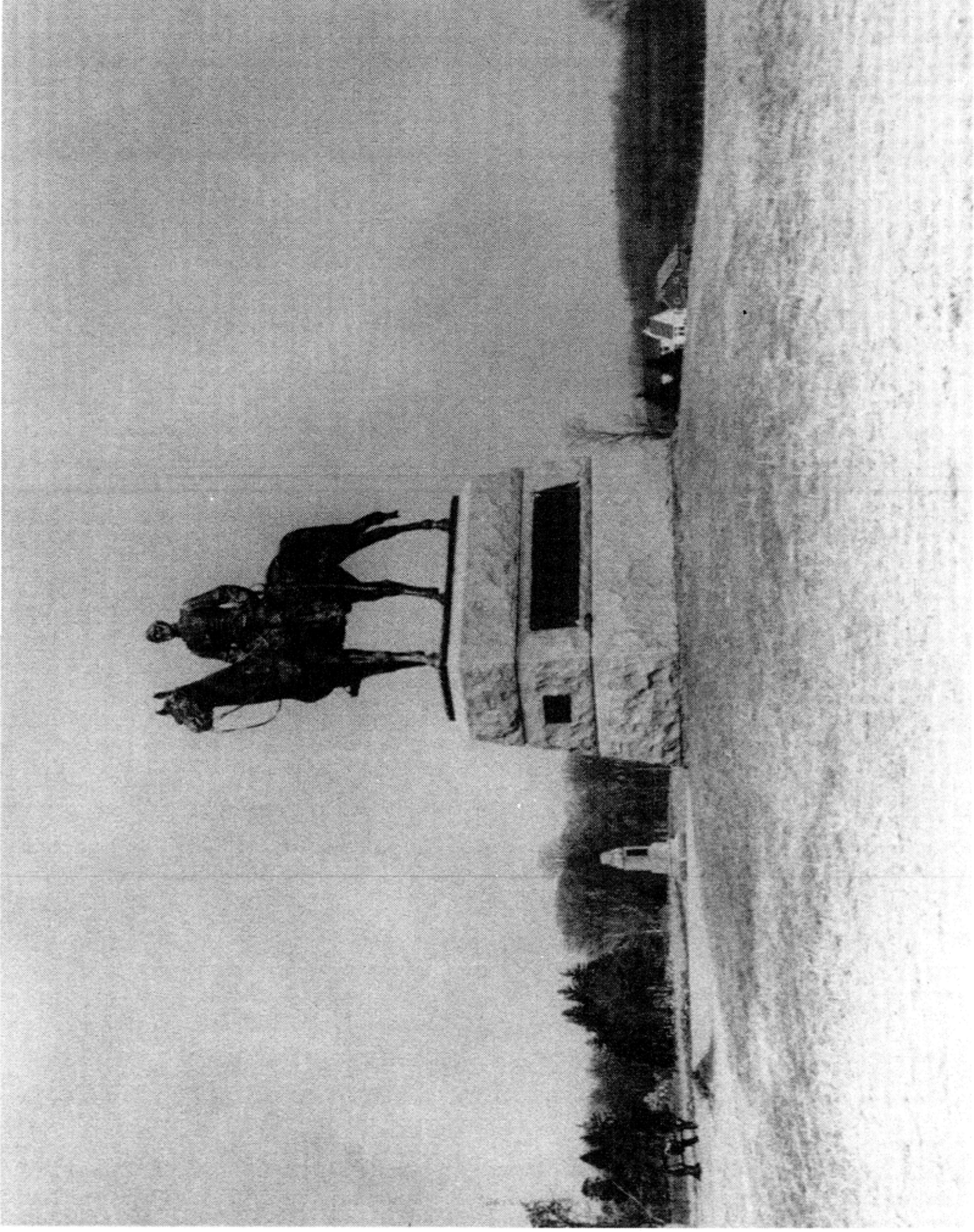
Lee: Lincoln! I never knew him! I am sorry!
I never knew him. He eludes maneuver
And defeat, and moulders our destiny.

Meade: The Army of Northern Virginia returns to you,
A tatter of the regiments that came to us.
You are shorn of the purpose of rebellion.
Look, now, upon the dreams of terror
In your soldiers' eyes, who came against the cliff
Of Lincoln's rectitude.

Lee: Lincoln! My soldiers of the South,
The fault is in me. Kemper has fallen, and Garnett.
Custer rides with fury against our testament,
And we are torn from front and flank!
Lincoln, I am your device at last, the strategy
Of God! The fault is in me, the pride,
For coming here to Gettysburg!



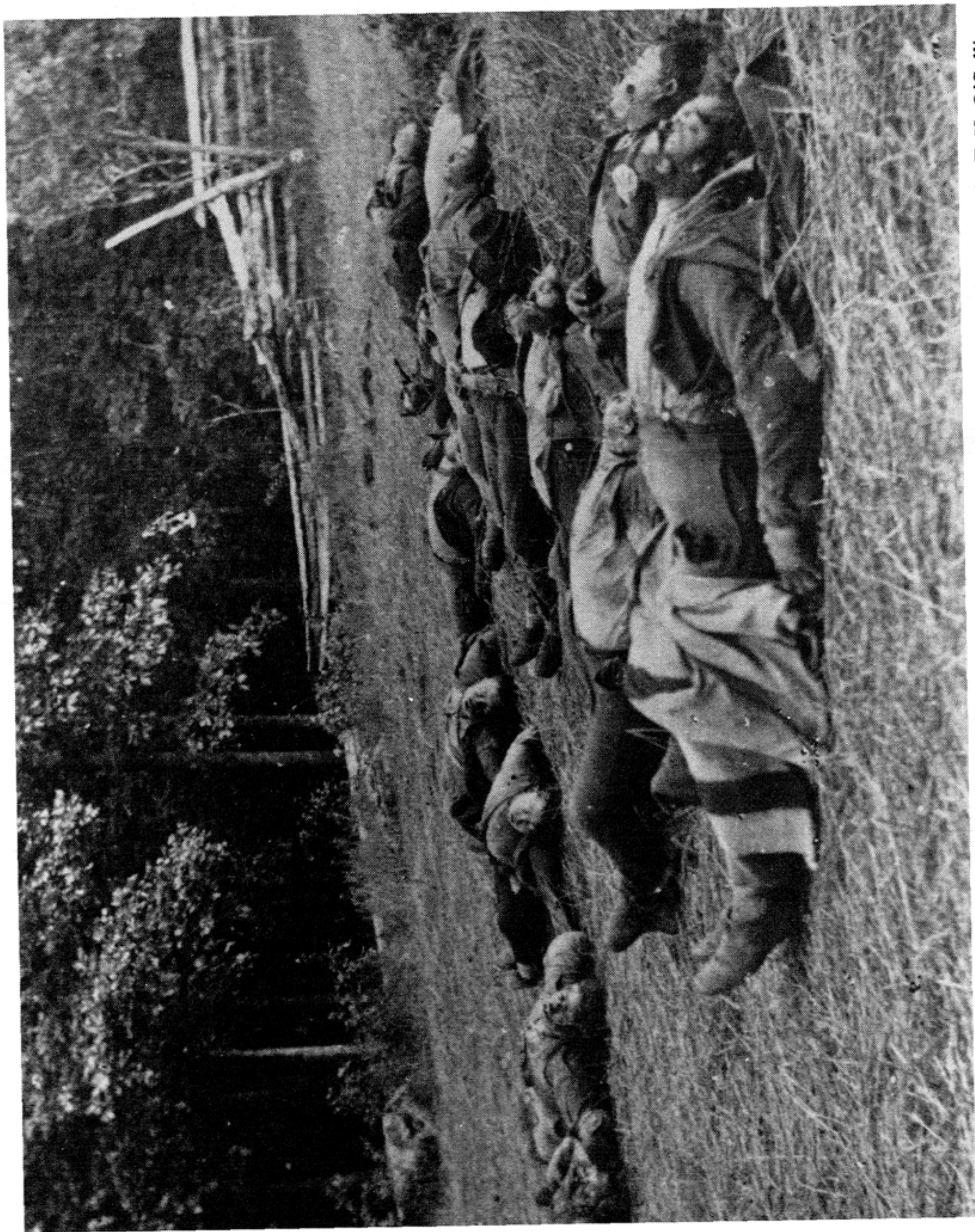
General George Gordon Meade's headquarters at Gettysburg, Pennsylvania (photograph courtesy Gettysburg National Military Park, National Park Service)



Equestrian statue of General Meade, Gettysburg, Pennsylvania (photograph from Lane Studios, Gettysburg, Pennsylvania)

General Meade of Gettysburg

Why am I the army's command? And here? The field
Trespasses into the sky, and trees, in the railing
Light, move as if shaken from below. The tides
Of armament rise along a perimeter. Lincoln,
Of official Washington, sets my will to stay
And field the revulsion of calm. A bugle cries
The solemnity of charge, and tight stars of rank
Revive my bearing into a rod of the mind's alignment.
Look! Brevet Custer wheels left against a hill.
Stannard levels his cannon. Hancock braces
In a chamber of trees. Fires of light intercede,
Driving through smoke. In the cleft of a devil's den
A rift appears. Rows and rows of Carolingians
Pitch and fall graciously to smolder in halls
Of lesser vision. Soldierly march sunlit and drawn
As in a sketch for a daguerreotype in the seethe
Of a thundercloud gathering heat and rolling.
The mounted slip askew, failing from sabres
That rise and sparkle where underlings thresh
And wind in unison. The grille of white smoke
Keeps apertures of fire that reverberate
The sounds of powdering. Why am I here in turn,
A way of being in command in avenues of holiness,
Fevering into decisions to hold here and there
Along the line? Christianly, I yield myself
Near the rock of an angle, caisson in the rustling field,
And the canister that puffs away, emblazoning
The shadows of my humility before the prince
Of generals on his white mount, pointing here.
I stay. I pitch and hold against his command.
I stay because the field is Gettysburg in the ring
And cavalry of Lincoln's wish, gripped as reins
Are gripped and steadied. I am the horseman with a scythe
That holds the dead that become the dead I touch
In my marrow, in the dials of silence, and in flares
That steal into the dark of my eyes. I worship
The leaping crown fire as it draws my soldiery
To mass and hold in Lincoln's vivid resolution.



Dead Confederate soldiers killed on 1 July 1863 at Gettysburg, Pennsylvania, collected near McPherson Woods, T. H. O'Sullivan photograph, July 1863 (photograph courtesy Gettysburg National Military Park, National Park Service)

Battlefield

A nick of tone in silence that broods like perfume
Of honeysuckle, then rippling and arpeggios at random
In the loft of trees: summer is a tropic
Of suffusions and melody, endless song and singing
Rendering presences of history that are fallen.
At Gettysburg and Verdun, what songs are sympathy
Or solace for the once disquieted? All flickering
Or edging of sound fulfills the day and says,
“Hush now. Ease is here, over hillock where you strew
Insignia, having held your uniform where they were pinned,
Mercilessly enjoined by canister. Birdcall
In an orchard, plaint rising through sun,
And the grass glitters dew. Lines of infantry
Moved through the radiance of noon where puffing loam
Was fertile year upon year, where farmer kept his sons
As agents for a fantasy. Desire kept them low
As laden boughs, but the fusillade arrived
From hill and rock, slight at first, then singing,
Quietly, quietly now.”

General Lee, after Gettysburg

All away, south to the Potomac, soldiers slip
The energy that keeps a light across their faces.
They fall in distances, at the very places
They put behind them in our invasion of the pale
North. Others have failed, as they, in the grey shale
Of commitment. But this claret, with bright traces
Stippling dust, dulls to iron, will soon rail
In a sentiment of oratory, but will not prevail
Behind them in the dark, forgotten spaces
Of our passing. Inveighing against my spate
Of sudden pride, I said that the fault was mine
For loosing tens of thousands against a hill.
Now, along the way to the Wilderness, a rill
Bequeaths itself. It is blue from air. It is thine,
O sepulchre; it becomes us all. Richmond, far away,
Is a resting place, and glory is a brilliant cay
Within the silver air.

General Robert E. Lee

Sunset is a lake, an evening silk
That slips and darkens, issuing
Away and calming. Dawn's talc
Of morning is dusk, the memory.
Fingers may touch a nearby fold
As if to gather, gather softly
And raise it into sun, cold
Against the deeper shades, west
And down: ah, sun's lake
Is slowly flowing, and in it
An embering, as if volcanos break
Horizons in a languor of the sun.
Last lights burnish steel
Of leaves as if a slowing
River folding into an inlet
Where willows stir the air
Though they are brittle and bare
Like arms I have seen, imploring.

Lincoln on the Battle of Gettysburg: What Will the People Say?

The duel begins. The distant cannon shout
Across the way in the flummery and rout
Of birds along a ditch. Skirmishers scout

The sun for angles. A repository of the Lord
Of Hosts is taken, is the field. It is noon,
And noon approaches, high and visceral toward

The eagle that trespasses dark and heavenward
To waver like an aegis. The vast room
Of day contains the space for the sudden shard

Or Michael of the testament. Now the low tomb
Of time is ready for the sacrifice where must strive
The ecstasies of rippling flame. Across the loom

Of an agate Saracen is a battle ready as a scythe
To sweep and fell. O solemn grain, leaves tremble
As the cannon do, milling where the sky is alive

With angels descending. They evolve and assemble
Visions for a resurrection. They are as seconds
For a time as ministers of nigre resemble

Them where bright talons show. One counts
The seconds. Now. Pickett's line arises, stiff
With cold. In a fold of prayer one mounts

A horse as an officer. And now in a hollow rift
Of smoke, he signals time, and a general prompts
His underling to chant a charge when and if

He inclines to die. A soldier, as he haunts
The past like a boy at play, has fallen across
His rifle but staggers up, chastened by the taunts

Of others steadier than he. Where is his loss
Of manhood as he sees a clump of trees
Across the way? His manhood is the dross

Of canister there ahead, in the very frieze
That statuary must commend. A century will dismay
His hope as he pitches forward, down in the lees

Of his own blood. Soldiers breathe and walk to play
With the imagery they stare to see. What can they do
But fumble through ferocity to find and stay

A moment for their breathing? One, who drew
A bayonet, falls towards it. Another holds a crest
And twists to follow an impulse that flew

Against him as a shell. At whose behest
Is this, a strewn bequest of parts, a routing
And a carpentry? That fragile chest

Is hollow. The rest is for the touting
Of some valkyrie. Horses fail as soldiers do,
And, tossing in some regimen, doubting
The upright world, flail in the abject rue

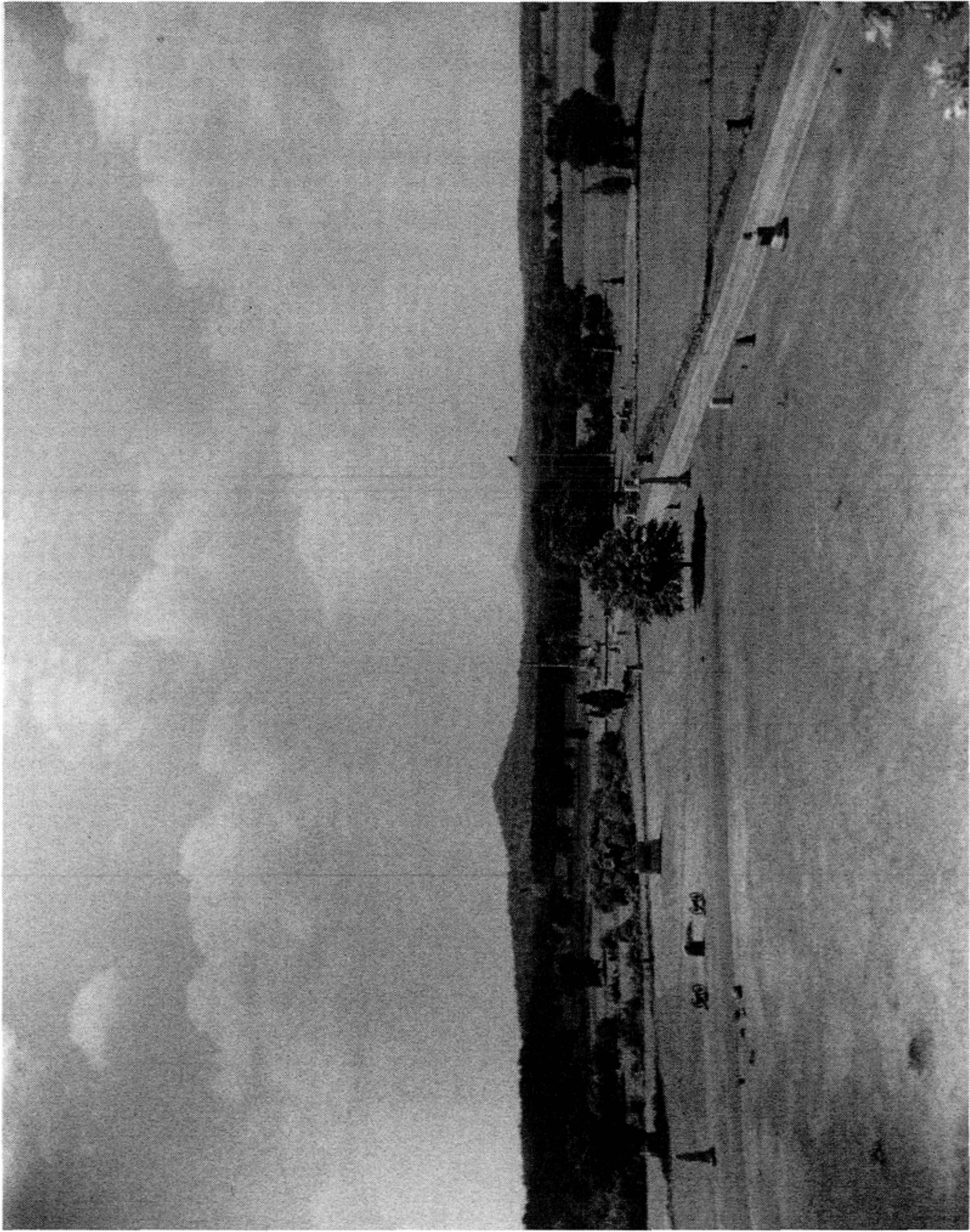
Of pain and bleat a sacrament of hissing
Over those who, slumping under, blue
From asphyxiation, die. Stannard, pressing

Choices, orders canister at a rod in lieu
Of accuracy. Some, turning over and confessing
A variety of sins, consider and then renew

Their vows to watch the silent sky. The high point
Comes, passes by, and Virginia will anoint
Them coming, somehow, home. Who will appoint

The rows of boxes for a convocation? Pray,
What rests inside? What will the people say?
North or South? Their very thoughts will stray

Into a turpitude that this should happen, away,
Away from home, unsanctified as pain.



Pickett's Charge area, Big Round Top in the distance, Gettysburg, Pennsylvania (photograph from Lane Studios, Gettysburg, Pennsylvania)

The Field of Gettysburg

Like music softening into silence, sunset
Dims into pastels and then into coloratura
Of grey and, from the dark, mild bravura
Of sils and tinges still paling, kismet
The halos of midnight, elision failing:
The quiet dark. Ah, sleep, the very field
Of sleep is strewn with soldiery who yield
Pungency of flame that rose from railing
Cannon on line in a glade, somewhere hidden.
Now hidden more, they are still, as if tired,
As are they who writhe and yield, bidden
To consider restraint of purpose now mired
In loam that reddens darkly, the dimming sky
A chamber for those who pass, or are passing by.

Near Appomattox, April 1865

I

General Robert E. Lee

The gait of my horse, though I keep it slow
With a hand of restraint, is the only sound
Of my secrecy. Philip Sheridan must round
My excursions to right and left with the flow
Of cavalry. Leaves and branches tremble low
In the pastel of sun as I rein beside a wand
Of red and gray. The day settles as if fond
Of whispering, the call of skirmishers or foe
So very near. I pass, not knowing whether
Death is the wanlight where field and town
Await the honor that slips like a feather
Before it hovers down. I stop near a tree
To gather my immediate staff, but before me
An array appears, cavalry brandishing the light
Of steel, but still, and then, as my columns move,
It parts to show the infantry behind, to prove
The mind of surrender, and its terms.

II

General Philip Sheridan

Pommel and whip in hand, I ride the field
For the edge or margin to turn or nip with sting
Of shot or sabre the confederate will for war.
In against Robert E. Lee's army is ally
To nick its length. It writhes, hunching feebly,
Paling even from grey, and where skirmishers
Were, ghosts of the brigades of Chancellorsville
Glint in the sunlight and faintly disappear.
The verifiable cordons, or ranks, remain,
Easing along, aware of my continuum.
I watch from a glen. Then suddenly forward,
I cross his column and wait with an iron
Brigade at my rear. I stiffen and exult
To see Lee's guard approaching, lost,
Only to see me hesitate, cleave my line,
And gather it at the flanks of infantry.
His guard slows, and then his center, amazed,
Offers the white banner, waving the dead
Will of valor before us—Richmond gone,
Petersburg, the Wilderness, and Gettysburg
Long ago. The angles of the triangle, the glen,
The ridge, the field are gone, and the pitched
Fire I see is halation of water and luciferin
Aloft and momentarily vanishing, as if a remnant
Only here as memory to reconstruct a cause
That failed before it began to pique my curiosity.

Terms of Surrender, 1865

Are these later than they should have been
In war, like love? I cast the regiments ahead,
Invoking the skiey field of light instead
Of the issues of maneuver before the fen
We had to cross. What angles in the ken
Of brilliance did I fail to see? The dead
Bestir themselves as lost decay. They were bred
Into darkness, and I cannot sense the when
And where advantage was. I shift the anatomy
Of strategy like a coin, but it opens to olios
Of cause, desertion, prurience, and folios
Of terms. This is edema, not metonymy.
Our purpose feigns itself and struts in a uniform.
A paper stuns me. I sign where it is warm.

The Spirit of Robert E. Lee after Appomattox

I once held Gettysburg, where stones are the soldiery
Of silence as they survey the field for a fiery test
Of Honor. And I still know it, though I keep the rest
Of meadows in sunlight lazing north and south in the witchery
Of wives whose command is milk, that white treachery
That is their goodness of cream and golden honey, lest
It be thought a deprivation, in Canaan. West
Of what I see is the forest that, like a wave of stitchery
Across a lap, smooths green and yellow to a peak
Of darkest evening. Now I vacillate as my experience
Becomes a history. The overlay of war is expedience
Of duty, but it is the primal justice of what I seek.
It came along, through maneuver, as dramatic play.
The meadow is better if I know the substance of the day
That history brought me to, and surrender.



Little Round Top from Devil's Den, Gettysburg, Pennsylvania, c. 1896-1900, devastation still apparent (photograph courtesy Gettysburg National Military Park, National Park Service)

The Rebel Cause

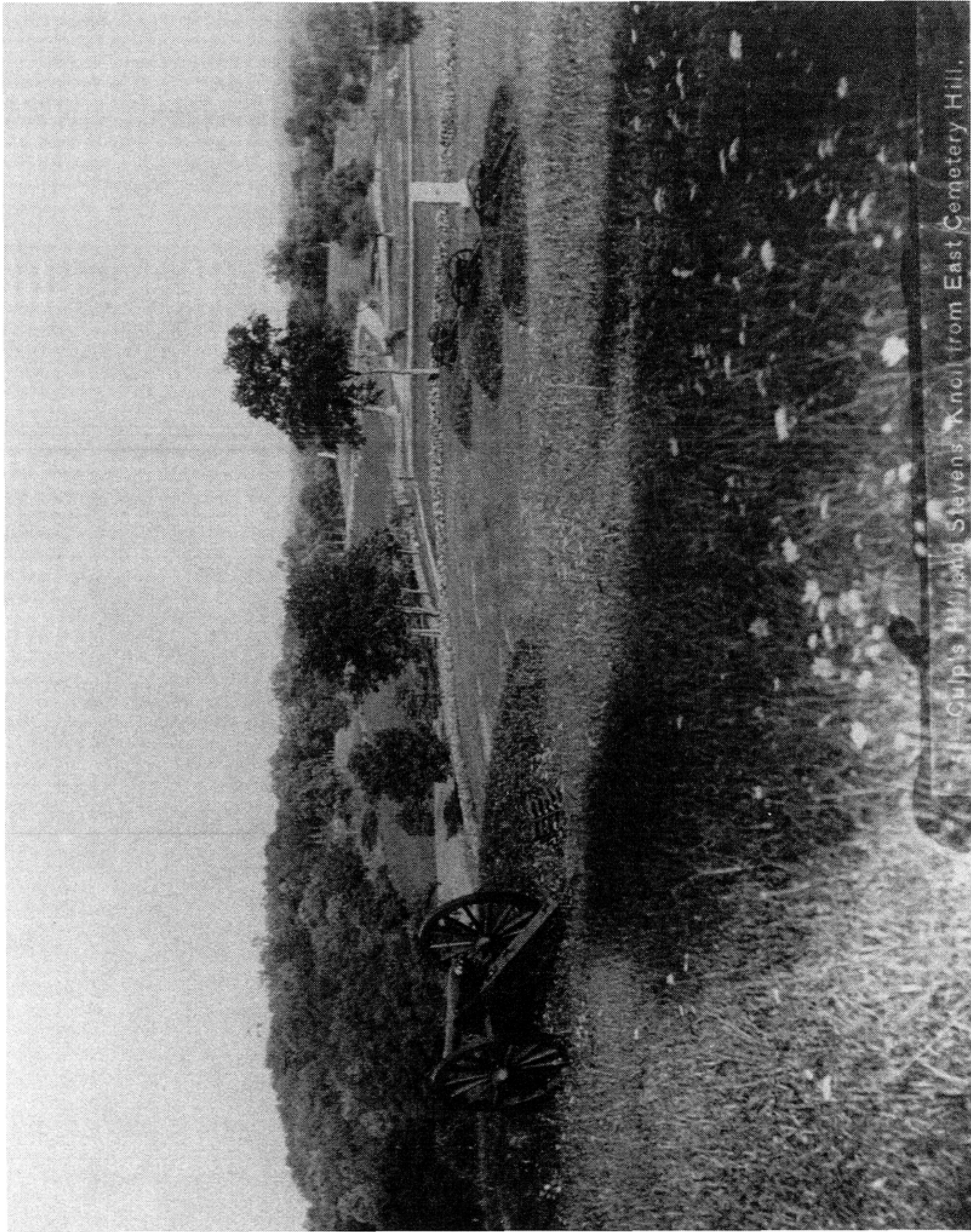
Moss in the bayou,
The air still as a web,
Vines hanging like caught
Sound, the evening still
Beyond recollection,
Still as a boat unwavering
In water. Now the ghost of Jackson
Maneuvers for the vision of the field,
The wilderness.
Whether the prince of generals
Seeks the intrigue of the blue deployment
Or marshals the wizardry of moths
Or fireflies, one cannot tell.
The greater visor of sunset lowers,
And the eye of twilight glimmers
In an old intelligence:
Lee before the sallow draw,
Hill in the dusk of trees,
Early before the wheeling cavalry,
Longstreet in the invidious orchard.
They limp in the march from the Shenandoah,
Gazing at the apparitions of the North
Against hill or rock
Or in the empty towns of Pennsylvania.
The lustre of conquest remands the vision
As if to some accountancy.
Those halt and lame who press their hand invisibly
Where shot entered look for the expedient hush
Of forgetfulness, where in the leagues beyond war
Rest is a commodity to be cherished like the puff
Of a rifle at the brow of a hill, briefly seen,
Or the sky that tosses and turns from the dart of fire,
Or the irruption numbing chest and arms. Darkness.
We cannot see. The twilight deepens there and there.
What are the political issues translated
Into a bloody angle at Sharpsburg,

Or into the mind before Richmond?
The damp settles over brow and arm,
And we are laid to rest in dreams
That possess the century as it wavers away.
Stillness.

The war cry of the owl,
The red glimmer of the firefly,
The maneuvering of the fox,
And we remand these heroics
To the public mind in perpetuity.



Little Round Top looking toward Devil's Den area, Gettysburg, Pennsylvania (photograph from Lane Studios, Gettysburg, Pennsylvania)



Culp's Hill and Stevens Knoll from East Cemetery Hill, National Military Park, National Park Service

Gravesend

A vagrant patch of lichens etches
A gravestone where a cursive name
Weathers away. Nothing's the same
Where memory's credence hardly fetches

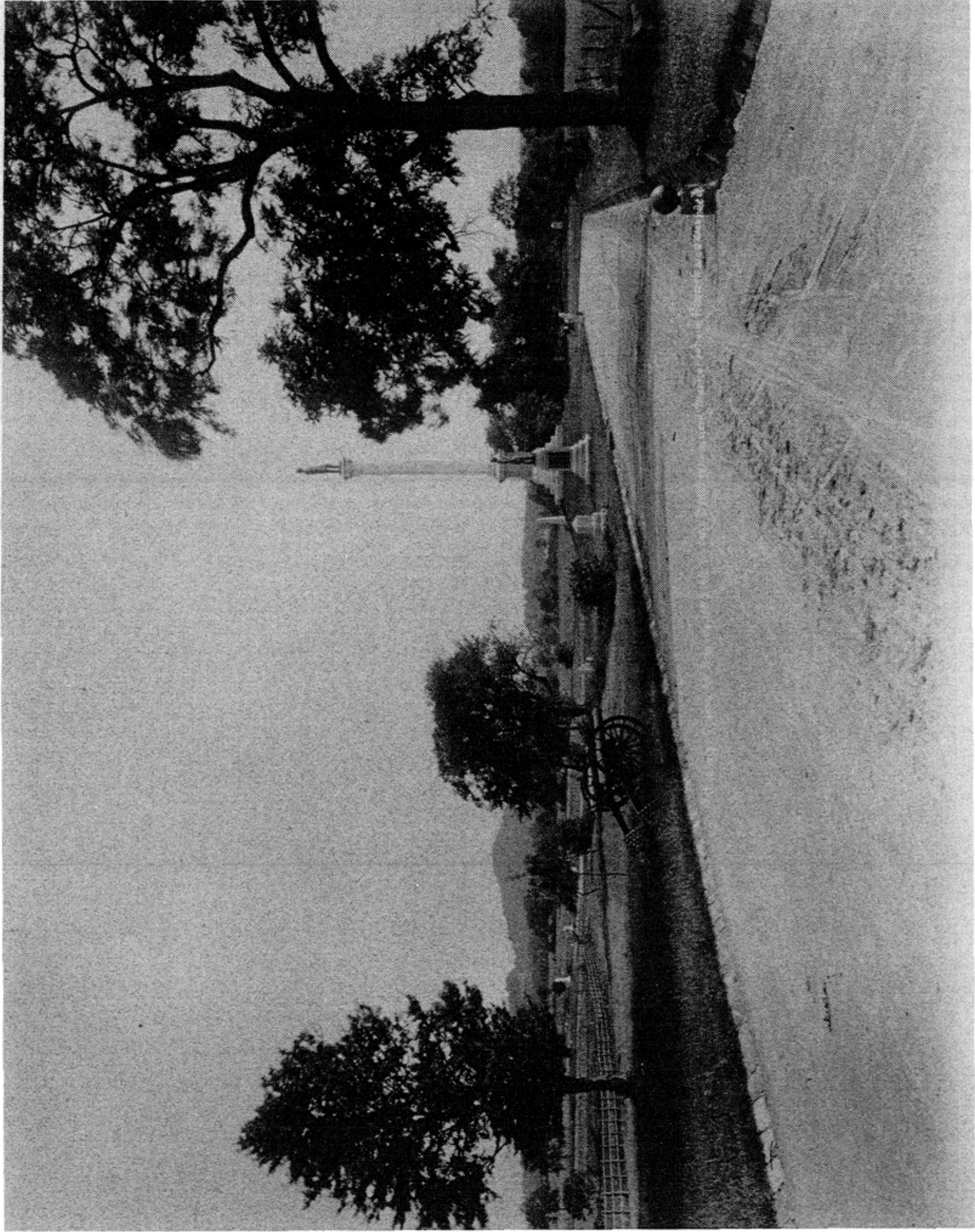
Feeling for a quiet rest in peace.
The name's illegible. A register inside
The chapel contains pages that abide
In dust, where a golden-glowing fleece

Of identity was thrown that it might lift
Into wind and light. No one remembers
Even the age as one casually dismembers
Messias in the ranging censure and rift

Of his mind. Flares of history illumine
Tares of the vindictive repining
That grew abundantly in his vining,
Continuous will, where a dimming lumen

Wanders over surfaces and flickers out.
What can remain beyond the cause
Of a stay against time as we pause
To wonder why we apparently flout

Someone whose headstone is awry,
Whose presence is the very sheen
Of photogenesis in brown or green,
Becoming dust, the azure sky?



View south down Union line on Cemetery Ridge, Big Round Top in the background, Union regimental and state monuments along Hancock Avenue, Gettysburg, Pennsylvania (photograph courtesy Gettysburg National Military Park, National Park Service)

War Historian

No one can muster the record of war except
In the flourish of the word by Whom word is given.
See the battle flag in a case. It lifts riven
In the furious devastation of fire here kept
For canister, wavering, and we see it, yclept
In tattered terms as guidon for leaven
In the mana of memory. Startling a haven
Of glory, the standard will redeem. It slept
The long years of repose, but an art will retain
The force of the field of relativity as surplice
Of eternal dedication, responding. Years splice
The years again, exquisitely in place. Chamberlain
Stands on Little Round Top with his regiment and holds it.
Designs for such years are not improvident.
They are on the wheel of galaxies, when time is bent
In space extending round and round the integer.
Quickly, its glimmering in the claret tanager!
Here. Take the bayonet as Longstreet's men caught
Rising against your barricade, nearly evident,
Surprise you very near. A stare, as in a sacrifice,
Reminds you of Calvary. Accept it as the price
God paid to fail before you, slumping anent
The ultimate. You cannot say what must happen
In this atonement will not happen soon to dampen
A blade in claret. Which is the now, suffice
God to say, rendering history as salvation?
And time in history glimmers like a station
On the way to the immortal cause of Gettysburg.

A Memorial to Ulysses S. Grant

The bright rail, and down the field another,
Twisted into the candor of an acrobat askew,
Were the rails of his supply. A solemn clue,
A relic of a battle, graces some mother
Church of pines nearby. Flickering at still
And windrow, revenants proclaim the rue
Of substance, the green of war, and strew
The rain of Vicksburg into the muddy rill
That whispers to the river. The soft trill
Of a birdcall is a sanctity, like a wavering
At end of day. The general falters, savoring
His breath, and slips against a barricade,
Breathless now. The maneuvers that dreamed
On maps soften into mist as if they were braid
And epaulets. What is that funereal box
They put him in? This odd soul, who locks
The memory in, will brace at dawn again
And strap the webbing on that holds steel
Of will serried in his countenance. He must feel
The sun of war across the line again in fen
Or field against the restless charge when
Daylight is the darkest dayspring sunning him.

Sacrifice of the Innocents

The disciples murmur in the conference rooms
And pass beyond the end of argument;
Beyond the stainless steel facades resumes

The day of the cormorant who glides, his height
Dazzling in the sun like the Word that is gone.
Everything had been said: all else is sleight

Or rhetoric: for He is dead and is raised
Only to His catafalque; the generations
Follow in the clear air the whispering

Wings. All else is the dying resolution
Of the state; the march from the city's square
Into the geometric streets, the green convolution

Of the final mind. Abroad, the race
Awakens; the light of the streets wanders
With the day; the professional face

Is a mask aware of the darkened reaches
Of death: the Word plays while they wheel
In the sinking fire of doctrine that teaches

Awe. Before the rounded stone they lift their shields;
The catafalque enters the square in the shadow
Of wings, and the blue lady of the white fields

Descends from the dim pavilions of lore
Murmuring of lost law and the black land;
Fire erupts from her fingers before

The long column; she touches the bier
And dissolves in light; utterly pale,
They cry, "Archangel, we ask thee, peer

Into the chapels where we spoke,
For we felt the eruption of light
And now await His stroke. . . ."

These children press near, touching the sheathing
Flag, and rise, enflamed, in a sheet
Of sky: the day widens there, wreathing

And turning in light. . . .

Sepulchre

In that quiet room, where years elapse,
The sun dwells through curtains, molten
Yellow at three as a sparrow taps
At the window, and at evening golden.
Shadows transpire in that room quiet
And ensepulchred apart from reaches
Beyond the door where a glimmering diet
Of mayflies teems over snowy beaches
That receive the sea, shoreward swirling
To greenery and calm. And, beyond,
They swarm down into shallows, pearling
Waters with gloss where they dawned,
With sun at morning, like a mist
Or wind's dust on a dusky hill—
Such light debris within the lists
Of day, where they turned against a mill
Of leaves shattering and intervening
Into dust, and twinkling. In that room
Beyond the sea, a shade is keening
As memory dies in the silvering tomb
Of day.

Twinkling Sun

The twilight assails the depths of evening,
Turns grey into darkness, to fail
The jasmine and the rise of the pale
Stars in their magic and their nonchalance.
How may I read them in this dale
Of leaves as in sorrow I glance
At them, but see your face, though unavailing,
Away? And as I see you, now beside the railing
You ease against, Uranus rises like a harvest
Moon, near a nearby crescent, to invest
Our sorrow as with our world we mist away.

The Leaf: A Benediction

A leaf may fall across the light,
Tip and rock as a vision might
In a bay, and dipping like a sprite
Find my outstretched hand white

In the sun. It was green transpiring
Into gold. It came from transcending
Blue, the regency of sky, desiring
Fall and heaps of flame wending

Far up to abeles of cloud and light
That slowly stray into afternoon.
It is a dream that one should plight
As a science of the skiey rune

Of superscription. One leaf must fall,
Alight, and burn through eternal Fall.

To gain a credibility in it,
Settle low into a palm.
One leaf is of word and will
And seeks a blue and deathless calm.

Book Reviews

LARRY C. PORTER and SUSAN EASTON BLACK, eds.
The Prophet Joseph Smith: Essays on the Life and Mission of Joseph Smith. Salt Lake City: Deseret Book Co., 1988. viii; 359 pp.
\$17.95.

Reviewed by Danel W. Bachman, institute curriculum writer, LDS Church Educational System, and Kenneth W. Godfrey, Utah North Area Director of the LDS Church Education System.

In the preface to their volume, editors Larry C. Porter and Susan Easton Black note the serious dichotomy between faith and scholarship in many of the books about the life and mission of Joseph Smith. They also remind us that most of these texts simply “rewrite known facts” while “ignoring well-documented new discoveries” (viii). Apparently, then, this book is intended to present new discoveries and at the same time “expand faith.” This approach appealed to us, and a review of the contributors to the volume heightened our expectations. With a small handful of notable exceptions, it would be hard to gather a more seasoned collection of faithful Latter-day Saint scholars on the life of Joseph Smith and early Church history. They have paid their research dues, and most have made significant, if not major, contributions to the Church’s growing historiography. All have demonstrated their faith in both Joseph Smith and the church he restored.

At least a third of the essays in the volume met our high expectations. Dean C. Jessee’s examination of “Joseph Smith and the Beginnings of Mormon Record Keeping” is one of the book’s best. Having access to materials unavailable to other historians, he not only provides the reader with new information but with new interpretations as well. The publication of the first written account of the restoration of the priesthood, taken from the Joseph Smith, Sr., patriarchal blessing recorded by Oliver Cowdery, alone makes the book worthwhile. Jessee, in reviewing the Prophet’s commitment to record keeping, displays the reason why historians today have such an abundance of source material with which to work.

Larry Porter's essay documents the accomplishments of missionaries proselyting with the Book of Mormon *before* the organization of the Church. While most of these details have been known to scholars, it is nice to have obvious but hitherto neglected material organized and discussed. Another fine article is William F. Hartley's examination of the restoration of the priesthood. Like Jessee, Hartley presents new information that successfully answers the arguments advanced by critics who declare that the coming of Peter, James, and John was neither known nor talked about in Church circles until 1835. Hartley's essay is not as thorough or comprehensive as the hundred-page unpublished study by Ronald Barney, but it is both substantive and significant. Hartley's explanation of why some early historical accounts say the Church was organized first in Manchester, then in Fayette, and then in Colesville¹ seems to be both accurate and persuasive.

Another exceptional chapter is Ronald K. Esplin's discussion of the gradual development of Joseph's perception of his mission. Esplin helps us to see a mature prophet, secure in his calling, working against a divine timetable rapidly approaching its final hour. His conclusion that Joseph's martyrdom was "timely" and came only after he had finished his "mission and business" (282) harmonizes with Richard L. Anderson's views, though Esplin does not cite Anderson.²

We are once more indebted to Robert J. Matthews for a fine essay on the Joseph Smith Translation. Using four examples, Matthews illustrates that the process of translation was "revelatory" in nature and offers this gem of an insight:

[I]t is a cause for rejoicing that these great truths were made known to the Prophet, not through language and ancient manuscripts, as only a few of the learned might be privileged to learn them, but rather through the spirit of revelation, which every faithful Saint may possess. (184)

Although Matthews has written so often and for so long and so well on the JST, we would venture to suggest yet another avenue of investigation that would bless the Church. With his great knowledge of biblical versions, as well as both the Old and New Testaments, we would like to see him tackle the knotty question of why some ancient documents seem to sustain traditional translations rather than Joseph Smith's work.

Richard L. Anderson provides a brief though helpful analysis of the Prophet's last speech, delivered 16 June 1844. The context of the speech shows that it was "a hard-hitting answer to his enemies" and demonstrated Joseph's "understanding of life's

thunderclouds which . . . were darkening around him" (320). Anderson sees the speech as "a solemn valedictory on the significance of his God-given mission and its revolutionary theology."

Other articles in the book, with some mining, yield historical ore of value. Susan Easton Black, for example, tells us that Symonds Ryder's son testified that his father did not participate in the mobbing of Joseph Smith and Sidney Rigdon in Hiram, Ohio, because he was "ill in bed at the time." She also informs us that none of the mobbers "experienced any repercussions from their attempt on Joseph's life" (170). Daniel H. Ludlow provocatively begins his tribute to Joseph Smith by writing about what he was not—"Joseph Smith is not Deity" nor was he "a tool of the devil" (333)—before telling us what he was. Keith W. Perkins, who has spent more than two decades studying Mormon Kirtland (including census records, plot plans, diaries, and journals), gives us the rather startling news that both the Father and the Son frequented Kirtland meetings. This is a radical departure from the traditional idea, emphasized repeatedly by Joseph Fielding Smith, that the Father rarely visits the earth, and then only to introduce the Son. In view of this, it seems to us that Perkins's disclosures require laying a more careful groundwork for his audience and more detailed evaluation of the evidence.

Despite the qualifications of the contributors and the undeniable value of some of the essays, the volume is not entirely satisfactory. Elder Neal A. Maxwell has said that if the story of the Church is worth telling, it should be told well. Unfortunately, the style of the majority of these essays is that of the bland graduate student research paper. There is little evidence of a unique personal style. Indeed, we have the impression that if the names were detached from many of the articles and randomly attached to others, even the most well-read in Church history among us would have difficulty discerning who wrote what. Nor is much eloquence to be found in the essays; there is certainly no B. H. Roberts in this group, much less a Churchill, Barbara Tuchman, or a James McGregor Burns.

The most serious indictment that can be leveled against the book is that a full two-thirds of the essays are little more than reviews, summaries, rehashes, or warmed-over narratives. Should one write if one has little to contribute beyond what is available in a hundred other places? The lack of substance and insight is the more lamentable because of the very qualifications of the authors. These are people who should be able to give the Church exceptional analysis and synthesis. Even Leonard Arrington, the master of generalization, and Richard Bushman, with his keen analytical skills, are disappointing in this volume precisely because their reputations led us to higher expectations.

Why then did these writers rush into print with an inferior product? We suspect the problem lies in the “publish or perish” or “publish or drift into career stagnation” phenomenon that has enveloped BYU. An easy way to bolster one’s vita is to edit or contribute to a collection of essays. There has been a spate of such volumes emerging from the Provo campus in recent years, and but for a couple of notable exceptions all are similarly flawed. That is, many of the essays reflect the author’s having merely dipped into well-worn files or hastily rewritten a lecture. While we do not find fault with the motive, we call attention to the inferior quality of the result. This is low-quality work, not in terms of testimony, faith, and orthodoxy, but in terms of thought, insight, and substance. We wish the editors and Deseret Book had insisted on far more of the latter qualities from the contributors.

Regrettably, the editors did not achieve their stated objective because the writers, in the majority of cases, failed to provide “well-documented new discoveries concerning Joseph” and fell into the trap of “rewrit[ing] known facts.” While this collection is perhaps half a cut above some others that have been published in recent years, it still falls short of what we have a right to expect.

NOTES

¹*Evening and Morning Star* 1 (April 1833): 84.

²Richard L. Anderson, “Joseph Smith’s Prophecies of Martyrdom,” in *Proceedings of the Eighth Annual Sidney B. Sperry Symposium: A Sesquicentennial Look at Church History* (Provo: BYU Religious Instruction, 1980), 1–14.

JOEL A. CARPENTER and KENNETH W. SHIPPS. *Making Higher Education Christian: The History and Mission of Evangelical Colleges in America*. Grand Rapids, Mich.: William B. Eerdmans, 1987. xvi; 304 pp. \$16.95 paperback.

Reviewed by Neil J. Flinders, assistant professor of secondary education at Brigham Young University.

The editors of this anthology use twenty-one contributors to explore the heritage, vision, and mission of evangelical colleges in the United States. A majority of the essays were originally presented as part of a conference on "The Task of Evangelical Higher Education." The book is timely in that evangelical Protestants have in recent years assumed a significant role in American politics, as evidenced, for example, in the contributions of the Christian coalition identified as the "Moral Majority" to the election of Ronald Reagan, and in the attention given to candidates Jesse Jackson and Pat Robertson—both ordained ministers—during the 1988 presidential campaign.

Evangelicalism is often equated with fundamentalism, but the terms are not synonymous. As used among Protestants, *evangelicalism* refers to preaching the gospel of Christ as found in the Bible for the purpose of inviting personal conversion; *fundamentalism* is the belief that the Bible is infallible because every word in it is the word of God. Not all evangelicals are fundamentalists, and not all fundamentalists are evangelicals. Evangelical colleges, as defined by Carpenter and Shipps, are "committed to engender *a distinctly Christian worldview* in their students and communities" (*italics added*). This theistic, supernatural worldview (holding that there is both a natural and a supernatural world) stands in stark contrast to the modern non-theistic worldview that maintains the natural world is all that exists; there is no supernatural. The choice between these comprehensive, contradictory, and permanently irreconcilable worldviews may constitute the central problem of intellectual history.

It is well documented that between about 1880 and 1920 the Western academic world turned away from the traditional metaphysical dualism of Christianity in favor of the secular metaphysical monism of modern physics. Insofar as this view dominates the academy, there is no place for transcendent or supernatural influences. Hence the difficulty that scholars in evangelical colleges have had in achieving credibility. By definition, evangelicals are not restricted to naturalism. They utilize assumptions that contradict the prevailing modern view. This conflict between

worldviews helps to account for the “several generations of second-class academic citizenship” mentioned in the book. According to Carpenter and Shipps, however, evangelical scholars are now feeling an increasing confidence that their “thoughts about seeking, imparting, and living the truth may be of interest to the larger world of higher learning” (xiii). It is this belief that underlies the basic message of *Making Higher Education Christian*.

The content of the book is divided into three areas. The first section traces the heritage of evangelical higher education from the scholastic period (c. A.D. 1150), noting the emergence of the university from within Christianity, and discusses the educational ideals of the Reformers and the Puritans, which saw social responsibility as an outcome of classical, liberal education. The common assumption was that knowledge was grounded in a shared theology and a shared acceptance of the authority of the Bible. Before the American Revolution, education was grounded in special revelation; after the Revolution, educational leaders allowed the didactics of the Enlightenment “to lay out the shape, purposes, and structures of knowledge, within which they were delighted to find a place for Christianity” (64). Between the Civil War and the Second World War, however, the commitment of American higher education to “a worldview in which first principles were God-ordained laws and the human capacity to work with such laws” was replaced by the secular, skeptical, naturalistic science of the modern worldview that was ushered in with “the academic revolution” (68). The authors note in retrospect that Christian colleges and Bible schools largely lost their scholarly credibility in the new secular perspective. But they did, it seems, retain a holistic curricular stance that emphasized the character development and morality that increasingly seems to be looked upon as a “new” vital resource. The resurgence of expressed conservatism during the final quarter of this century has placed evangelical “colleges among the fastest growing in America” (137).

With this recent growth has come a “new faculty”:

They are sophisticated on epistemological and methodological issues, and they are committed to meaningful participation in the life of their discipline beyond their teaching responsibilities and even beyond the confines of the campus. They tend to be cosmopolitan and have a broad view of Christianity, one that appreciates the various traditions that are represented in the church. Because of heavy teaching loads, only a few may achieve national prominence for their publications and innovations; yet most of them do not seek it either. Much more than their predecessors ever did, they measure their own worth and achievement by meaningful, not necessarily prominent, participation within the discipline. (147)

In discussing the vision now needed for evangelical colleges, the authors acknowledge the dangerous “influence of intellectuals in church life” and cite historical evidence indicating that the “vitality of churches” has been “inversely proportional to the influence of intellectuals in church life” (155). They cite William Buckley’s observation that “he would sooner be governed by a church whose bishops were chosen by the first five hundred names of the Chicago phone directory than by a church whose bishops were a bunch of university professors” (155). In contrast to this recognized danger that the intellect can be an enemy to the spirit is the expressed need among evangelicals within higher education to focus their intellectuality on developing Christian thinking, closing the gap between spirituality and thinking. Christian scholars, the book maintains, can contribute to this end, but it will necessitate “bringing Christian criteria to bear on academic work” (187). The evangelical vision in higher education is that scholarship is more than the nineteenth-century practice of adding Christianity “onto neutral secular learning.” It demands the integration of “Christian faith with learning.” But integration alone does not meet the goal of Christian higher education. “Christian scholars must try to integrate faith with learning so as to produce *Christian* learning” (201).

The third section of the book reveals the major weakness of the collection. In exploring how to advance the mission of evangelicals in higher education, the sound of the trumpet is very unclear. Parts 1 and 2, which focus on reviewing history and defining problems, are generally stimulating, reasonably informative, and insightful. Part 3 lacks the energy and excitement a reader is led to expect in a finale that is titled “Advancing the Mission.” The essays do not create a vision that could unify or bond those who must join forces to solve the challenges previously identified. They lament administrative difficulties associated with law and governance, pose curricular shortcomings related to minorities and women, and bemoan the lack of “a first-level research university” for evangelicals (295). The book is long on description and very short on solution.

While the book is aimed primarily at those directly involved in the evangelical movement, it may also be helpful to those who are interested in the role evangelicals are playing in the larger social milieu of our times. Latter-day Saints may find the discussion interesting because it focuses on concerns and conflicts similar to those faced by academicians in our own intellectual community. Latter-day Saint scholars have also struggled with the challenge of compromising or compartmentalizing their worldview in order to

retain professional credibility. Our faculty and students sense this tension in our own educational institutions. Similarly, there is an expressed lament in some circles at the lack of "a first-level research university," and in other circles at the failure to sufficiently close the gap between "Christian faith and learning . . . so as to produce Christian learning." It would be interesting to see how the academic intellect of Mormondom would explicitly propose "bringing Christian criteria to bear on academic work" as a means of "advancing the Mission." It can be discomfoting to honestly face any form of the ancient question: To what extent should Christians compromise their convictions in order to obtain or retain professional credibility?

LOWELL L. BENNION. *The Best of Lowell L. Bennion: Selected Writings 1928-1988*. Edited by Eugene England. Salt Lake City: Deseret Book Co., 1988. xxv; 305 pp. \$15.95.

Reviewed by Kenneth W. Godfrey, Utah North Area Director for the LDS Church Educational System.

The last two decades have seen Lowell L. Bennion become both a legend and hero of Mormon intellectuals. If the Latter-day Saints, like the Catholics, officially bestowed sainthood, he would certainly be a leading candidate. Mary Bradford, a former Bennion student, is busily engaged in writing his definitive biography, and a University of Utah chair has been funded and named in his honor. Recently inducted into the Utah Hall of Fame, Lowell is the subject of an essay written by Douglas Alder, another former student, in a recently published book about great institute teachers. Now a volume containing thirty-three of his best essays chosen from more than 120 of his articles and books written while living a life spanning more than eighty years, has been published by Deseret Book Company. His life and thought, while gentle, filled with charity, kindness, and love, certainly had its share of controversy and even some disappointment.

A little less than thirty years ago, he was, by Church officials, relieved of his assignment as director of the Salt Lake Institute of Religion for reasons that are still clouded. For years before that, many Church conservatives were uncomfortable with some of his doctrine, which they considered too "humanistic," too "liberal," and possessing an "uncertain sound." At the same time, hundreds,

if not thousands, of his former students, many now college presidents, corporate executives, intellectuals, and governmental officials, postulate that they would not have remained faithful Church members if not for the hours they spent in Lowell L. Bennion's institute classes and at his home.

Professor Eugene England, one of Bennion's brightest and most gifted students, begins this book with a short biographical essay. Insightful and clearly written, England acquaints us with a man who loved old trucks, cows, whole milk that he had drawn himself, homemade bread, the Hebrew prophets (especially Amos, Hosea, and Micah), Jesus, the world's impoverished, Max Weber, writing, humanism, and the merciful aspects of the restored gospel. Though England graduated from the University of Utah and received a Ph.D. from Stanford University, he ranks Lowell L. Bennion as the best teacher he ever had. Thus, he could perhaps not be faulted too much if his introduction fails to deal with the controversial aspects of Bennion's life. That is not the purpose of the essay nor the objective of the articles he has compiled. Rather, England wants us to know something of the greatness of the man before introducing us to his writings.

Certainly a person born and reared in Salt Lake City's east bench and educated in Utah's public schools and universities must have had unique capabilities to have completed his Ph.D. in German universities, then considered the finest in the world, written his dissertation in English, defended it in French, and have it published in book form in English—the first English translation, we are told, of the thought of the great German intellectual, Max Weber. Bennion, intellectually, is certainly not an ordinary man. It is unusual, too, that a person so well educated at a time when few Latter-day Saints were so blessed, did not become a university president or a General Authority. Yet he accomplished more and his legacy will probably last far longer than many of his contemporaries who did become college presidents, Church leaders, and powerful politicians.

Perhaps the clue as to why Lowell Bennion did not achieve the same positions as did many of his less gifted contemporaries is found in his writings, which to a great extent reflect his philosophy of life. Early in his career, Bennion concluded that "the important thing is not getting somewhere but being something" (31). The supreme value of life, he says, "is life itself" (30). Other values which he deemed of greatest importance were health, trust, aesthetic sensitivity, human relationships, integrity, creativity, and truth. Over and over again in his essays he condemned, as did one of his favorite prophets, Amos, the outward forms of religion. If

the disciple lacks the character that gives activity and worship its substance, then mere attendance to duty amounts to nothing. His emphasis was on justice, mercy, humility, and doing good to all men. Bennion writes far more about hope than pain, more about optimism than pessimism, more about compassion than punishment, and more about becoming a celestial person than attaining the celestial kingdom. He, early in life, cleansed his whole being of bigotry, and long before blacks could receive the priesthood, contended that denial of such a blessing to so many of God's children was neither scriptural nor right. Strangely, he has been silent regarding women's issues, though his writing provides clues that he probably favors much of the women's rights movement.

Bennion's essays range broadly and include tributes to close friends, dating skills, principles of a happy marriage, the first principles of the gospel, how to keep religious faith while in college, and how to teach effectively. In fact, one of his most creative and insightful sentences comes from an article written for his fellow Church educational system teachers. He said, "A student should not come out of a class in religion with all the prophecies dated, the celestial kingdom landscaped, the past and future of the Creator understood and himself ready to step into a place in the councils of Deity" (151). It would appear from his writing that his life, his thoughts, and his feelings were centered on the things that most of us would agree matter most. Amos, Hosea, and Micah impress him far more than Moses, Isaiah, and Jeremiah. The Sermon on the Mount means more to him than the theology of Paul. He prefers John, the apostle of love, to the writer of Hebrews; he favors those parts of the book of Alma which teach us about faith, to the more doctrinal aspects of the Book of Mormon. His life, his teaching, his philosophy, and his religion are so people-centered and so filled with faith in the basic goodness of all mankind that to have Lowell Bennion as your judge would indeed make the final appearance before the bar a pleasure. Perhaps he mirrored Christ as he truly is.

Just as he found good in all men and in all religions, so Bennion helped college students discover the positive in the various academic disciplines they encountered. Many of his articles and books were specifically designed to aid students to increase their faith and commitment during the years they were at the university. His was a reasonable, practical approach to life, college, and learning, because truth was a unifying force not a divisive one. Latter-day Saints were only committed to believe and have faith in that which was true, never in what was false.

These essays compiled by Professor England display a man who loved life, lived it to its fullest, found joy in a sunrise, a mountain, a child, a simple hymn, a teenage boy, a college president, an Apostle, and in working with the poor and the misfits of society. He even found happiness in growing old because that too was part of God's plan.

Many years ago, having just finished a Ph.D. and having been appointed director of the Stanford Institute, I invited Lowell to give a devotional talk to the students the same week he was in Palo Alto for a "Know Your Religion" lecture. Following his noon forum address we spent two or three hours walking the oak-lined walks of the Stanford campus. He taught me some great lessons that day regarding honesty, compassion, and love that I have never forgotten. He seemed unconcerned about such matters as power, position (either ecclesiastical or political), wealth, or fame. Indeed, he exemplified in life his philosophical creed which is reprinted in the biographical essay that begins this book:

Learn to like what doesn't cost much.
Learn to like reading, conversation, music.
Learn to like plain food, plain service, plain cooking.
Learn to like fields, trees, brooks, hiking, rowing, climbing hills.
Learn to like people, even though some of them may be different
 . . . different from you.
Learn to like to work and enjoy the satisfaction doing your job as well
 as it can be done.
Learn to like the song of birds, the companionship of dogs.
Learn to like gardening, puttering around the house, and fixing
 things.
Learn to like the sunrise and sunset, the beating of rain on the roof and
 windows, and the gentle fall of snow on a winter day.
Learn to keep your wants simple and refuse to be controlled by the
 likes and dislikes of others. (xxiii)

In a general priesthood meeting sermon delivered in 1968 and repeated in this book (198), Lowell Bennion told a story about his ninety-year-old mother who, when the power went off in her home, was telephoned by an anxious daughter who said, "I will come and bring dinner." "No, thank you," the aged mother replied. "What will you do if the power does not come on?" the child asked. She answered, "I will light a candle and play my guitar." Lowell Bennion has lit many candles over his eighty years, and the music of his philosophy, his religion, and his teaching will never die out.

We can forgive the repetition that spans these essays. Though we grow tired of reading over and over the same quotes from Amos, Hosea, and Micah, we are mining a rich enough shaft that we can

overlook the ore that we have shoveled before. For those who are caught up in the web of achieving excellence and attaining power, who seek the perch of position and the fame of fortune, and who find themselves frequently depressed, disappointed, and about to compromise their integrity, a night spent reading this book will probably be better than most things they could do. Furthermore, those who enroll in seminars on how to deal with stress, or how to make a marriage richer; or those who fear God and his judgment, will find the Bennion essays most satisfying. Lowell Bennion knew how to teach, how to preach, and how to write, but what is more important he knew how to live.

While England has compiled an uncommon book of essays, at least two questions beg answers. Why are the Bennion writings of the 1940s and 1950s strikingly similar to those he penned in the 1980s? Was it because he discovered the “truth” early in his life and felt no need to change? Or did he simply stop reading, thinking, and growing? Secondly, why was it that a man who wrote so much about love, kindness, humility, mercy, and grace, could engender such strong opposition to many of his ideas and, furthermore, induce many conservatives to become his enemies?

We hope that the forthcoming Bradford biography will answer these and other questions, regarding this very complex thinker. Because for all his homespun philosophy, his straw hats, his old pickup trucks, his Idaho farm for boys, and his simple lifestyle, Lowell L. Bennion was a most uncommon man.

HUGH NIBLEY. *The Collected Works of Hugh Nibley*. Vol. 1, *Old Testament and Related Studies*. Edited by John W. Welch, Gary P. Gillum, and Don E. Norton. Salt Lake City: Deseret Book and the Foundation for Ancient Research and Mormon Studies, 1986. xiv; 290 pages. \$15.95.

Reviewed by Kent P. Jackson, associate professor of ancient scripture, Brigham Young University.

Hugh Nibley is the best-known and most highly revered of Latter-day Saint scholars. For over forty years he has enthralled his readers and listeners with his encyclopedic knowledge, his wit, and his untiring research in defense of Latter-day Saint beliefs. It is not saying too much to suggest that he has become a legendary figure in Latter-day Saint academic circles. He has developed a remarkable following among his readers and former students, several of

whom now continue his work in academic professions of their own. This book, published by Deseret Book and the Foundation for Ancient Research and Mormon Studies, inaugurates an ambitious multivolume project to gather and publish “all of Hugh Nibley’s published books and articles, as well as many other previously unpublished papers and transcribed talks” (vi). The *Collected Works* series represents a major effort to honor him for his many accomplishments.

Nibley has had his detractors as well. Because of his unhesitating willingness to speak out in defense of Latter-day Saint positions, he often finds himself a target for the Church’s critics. Since his 1946 publication of *No Ma’am, That’s Not History*, he has been seen by many as the Church’s chief apologist. Even today, some feel that if they can neutralize the arguments of Hugh Nibley, they have effectively refuted the beliefs of the Church. Nibley himself would undoubtedly agree that such a stance both overestimates his arguments and underestimates the strength of the Church’s teachings. In his role as a defender of the faith, Nibley has served extremely well and deserves our highest admiration and praise. Those of us who share his conviction that the restored gospel is true would do well to emulate his lifelong dedication to defending and sustaining it. My own serious misgivings about his methodology do not detract from my admiration for his life of scholarship consecrated to the highest cause.

In the present volume, eleven items are collected which are related in some way to the Old Testament. They were presented originally either in print or from the speaker’s platform between 1956 and 1980. Only three of the eleven (chaps. 1, 4, and 6) had not been published previously. Echoing the feelings of Nibley’s followers throughout the Church, editor John W. Welch suggests in his Foreword that most of Nibley’s lifetime total of nearly two hundred titles are classics (ix). If that is in fact the case, then this volume has been severely shortchanged; nothing in it can be called a classic. It is, in fact, a disappointing collection.

There are several areas about which I have concerns regarding the material in this book:

1. In most of the articles Nibley shows a tendency to gather sources from a variety of cultures all over the ancient world, lump them all together, and then pick and choose the bits and pieces he wants. By selectively including what suits his presuppositions and ignoring what does not, he is able to manufacture an ancient system of religion that is remarkably similar in many ways to our own—precisely what he sets out to demonstrate in the first place.

There are serious problems involved in this kind of methodology. The various religious communities from whose documents Nibley draws his material had mutually exclusive beliefs in many areas. By removing their ideas from their own context (thus rendering them invalid) and joining them with ideas from other communities—similarly removed from their own context—Nibley creates an artificial synthesis that never in reality existed. The result would be unacceptable and no doubt unrecognizable to any of the original groups. Generalization is the key ingredient. Such phrases as “the ancient world is now all one” (13), “ancient civilization was . . .” (43), and “according to the ancients” (131) presuppose a common worldview for all the disparate cultures of the ancient world. But this idea is as unhelpful as “according to modern man” would be to postulate a common ideology for Ottoman bureaucrats, Bolshevik revolutionaries, Nazi fascists, Afghan peasant women, and Manhattan Yuppies. In spite of influences such as Hellenism, the Roman Empire, and Christianity, the ancient world was as diverse as our own, if not more so—a fact that is generally ignored in this book. Nibley’s chapter “Treasures in the Heavens” is one of the most sophisticated in the book, but in it the most puzzling examples of this methodological pitfall can be found. It speaks of the “‘treasure’ texts,” a term which is not defined but which, judging from the sources cited, must include documents from the Old and New Testament pseudepigrapha, the Essenes, the Mandaeans, the Gnostics, the Manichaeans, the Early Christian Fathers, the ancient Egyptians, and the classical Greek poets. If we define an artificial collection like this—which spans hundreds of years, thousands of miles, and widely diverse societies and religions—as all being the same (they were “all teaching very much the same thing,” [126]), we can bring forth proof that “the ancients” believed anything we want them to believe.

This kind of method seems to work from the conclusions to the evidence—instead of the other way around. And too often it necessitates giving the sources an interpretation for which little support can be found elsewhere. I found myself time and time again disagreeing with this book’s esoteric interpretations of Qumran passages. In several places Nibley sees things in the sources that simply don’t seem to be there (for example, most of the preexistence references in the Dead Sea Scrolls, cited in chap. 7). This is what inevitably happens when scholars let their predetermined conclusions set the agenda for the evidence. The work in this book is better informed and more sophisticated than the Dead-Sea-Scrolls-prove-the-gospel-is-true firesides and tapes that have been

popular around the Church, but the methodology is not much different.

2. In this book Nibley often uses his secondary sources the same way he uses his primary sources—taking phrases out of context to establish points with which those whom he quotes would likely not agree. I asked myself frequently what some authors would think if they knew that someone were using their words the way Nibley does (the same question I asked myself concerning his ancient sources as well).

3. Several of the articles lack sufficient documentation and some lack it altogether. This is to be expected in a collection that includes popular articles and transcripts of speeches. The editors clearly deserve our praise for trying to bring Nibley's footnotes up to professional standards. But given the complexity of the material, it was not always possible. The first article, for example, is riddled with undocumented quotations. Some of Nibley's most puzzling assertions remain undocumented—or unconvincingly documented—even in those articles that are footnoted heavily. The two most extensively referenced articles, "Treasures in the Heavens" and "Qumran and the Companions of the Cave," display the opposite problem. The seemingly endless footnotes in those articles suffer from dreary overkill, and yet too often I was disappointed by searching in vain in them for proof for the claims made in the text.

4. Nibley's wit has made him one of the most sought-after speakers in the Church. But I am dismayed to find in this collection several passages in which his satire tends toward sarcasm and name-calling, which have no place in serious scholarship. A frequent vehicle for this is the straw-man approach. Nibley frequently misrepresents his opponents' views (through overstatement, oversimplification, or removal from context) to the point that they are ludicrous, after which he has ample cause to criticize them. This may make amusing satire, but it is not scholarship. Nibley has made a fine career of responding to those who have either willfully or unknowingly misrepresented Joseph Smith and the gospel. Thus I am troubled that this book would contain the same kind of distortion. If it is unfair when directed against us, is it somehow an acceptable method when directed at our critics?

Among those satirized in this book are "the learned" (8), archaeologists (chap. 2), "the clergy" (38–39), "professional scholars" (39), "secular scholars" (39), "the doctors" (217–18), "the schoolmen" (217), and "the doctors, ministers, and commentators" (221). We read that recent document discoveries "have proven so upsetting" (8), "startling" (241), "disturbing" (241), and

“maddening” (241) to people of this sort, and that “there was a lot of political and other pressure to keep them from coming out” (125). These are frequent, but inaccurate and grossly unfair, leit-motifs in this book. “The clergy,” according to Nibley (I have no idea who this means here), exhibited “marked coolness” to the Dead Sea Scrolls (39). Why would they be “warm” to them, or “cold,” or anything else? The Dead Sea Scrolls are irrelevant to what clergy do; most don’t know or care that they exist.

5. My final area of concern is more properly directed at the editors than at Hugh Nibley. What is the point of publishing some of this material? There clearly is merit in republishing significant material that has been unavailable to readers for many years. But few thinkers in the history of the world have been so good that everything they ever wrote or spoke should be memorialized in this way. Several of the chapters in this book, particularly 9 and 10, are so weak that the editors would have been doing Nibley a much greater honor if they had left them out. What is the point of resurrecting such material, which is now completely out-of-date and was not even quality work when first published three decades ago? In doing so they have not done Nibley a service, nor have they served his readers.

Hugh Nibley’s contributions to Latter-day Saint scholarship have been to a large degree the product of his willingness to take a refreshing, imaginative view of things and express it in refreshing, imaginative ways. This book, despite some of the methodology used in it, contains a share of what Nibley does best. I found his discussion of the Creation and the Creation accounts (64, 69–74) to be very insightful—and enjoyable reading as well. I was most intrigued with his brief note on humans and animals on other planets (146), in which he proposes that on distant worlds different varieties of animals are found, but humans (presumably because we are God’s children) are the same everywhere. Nibley’s thoughts on “the silliest doctrine of all,” cultural evolution (80–81), are well-stated. His keen perspective on human nature is expressed in thought-provoking terms: “To be first is Satan’s first principle” (95); “You can always find somebody who is worse than you are to make you feel virtuous” (217); and “To be highly successful in this life is hardly the ultimate stamp of virtue” (233). “Scholarship,” he tells us, “is also an age-old, open-ended discussion in which the important thing is not to be right at a given moment but to be able to enter seriously into the discussion” (28). And all of us who engage in academic pursuits should beware of “the gas law of learning”: “Any amount of information no matter how small will fill any intellectual void no matter how large” (4).

Nibley never rests from defending the Book of Mormon, which he calls “God’s challenge to the world” (16). Particularly timely, in light of recent notions concerning its origin, is his comment: “Unlike the Bible, it cannot be partly true, for the Book of Mormon itself closes the door on such a proposition” (17).

As usual, Nibley is at his best when he is being a social critic. Small pockets of social criticism appear in various places in the book, but the largest concentration is found in his chapter “Great Are the Words of Isaiah.” Note the thought-provoking comments on “successful people” and Zoramites (221–22). Nibley lists among his (and to a lesser degree, Isaiah’s) areas of concern for potential danger: competitive society (227), the courts (228), real estate development, bribery, trade (229), and power (232).

Finally, my favorite part of the book is the brief but all-too-instructive story of the dog cave on 253–54. One learns a lot from this real-life episode. And, incidentally, one should also gain from it a healthy skepticism for much of what has been passed down to us from the ancient world—including those documents and traditions that Nibley holds in such high regard.

Hugh Nibley’s iconoclastic and imaginative way of looking at things has opened a whole world of excitement and challenge to those of us who have read his words and heard him speak. Far fewer in the Church today would be interested in scriptural research and ancient things in general if Hugh Nibley had not come along. For this we can all be sincerely thankful to him and for him. He has served for over four decades as a faithful apologist (in the most positive sense of the word) for the Church. Because of this, criticism directed at his work is more often than not actually aimed at the Church and its scriptures instead. Such is not the case with this review. The task at hand has been to evaluate one book only, not an entire career. Unfortunately, this book is not a collection of Nibley’s best material. It will likely turn out to be the weakest in the *Collected Works* series.

CAROL L. MEYERS and ERIC M. MEYERS. *Haggai, Zechariah 1-8* (Anchor Bible, vol. 25B). Garden City, N.Y.: Doubleday, 1987. xcv; 478 pp. \$20.00.

Reviewed by Stephen E. Robinson, associate professor of ancient scripture, Brigham Young University.

It is unlikely that another commentary will soon approach this contribution by Carol and Eric Meyers in either its massive attention to detail or its analysis of literary structure. In fact, so comprehensive is the present work that what was originally to have been one volume is now going to be two, and the reader will have to wait for Zechariah 9–14 and Malachi to come out as Anchor Bible 25C. The volume follows the usual format of the Anchor Bible (translation, notes, comment), but it might have been better in this case to merge the notes and comment. Because of the sheer bulk of the material, the discussions in the notes and those in the comment sometimes lose track of or repeat each other.

The authors are to be congratulated for a sensible translation that preserves the character of the Hebrew text even at the expense of an elegant English rendering. Readers can get elegance from the King James Version; Meyers and Meyers have stuck to *their* task, which is to put us in touch with the Hebrew text as much as is possible in translation. Also particularly good is the introductory section dealing with historical context (xxix–xliv).

The authors' basic thesis is "that Haggai-Zechariah 1–8 is a single compendious work" (xlvi). They argue for the literary unity of this material on the bases of (1) chronological data (xlvi), (2) structural unity (xlvi–xlviii), (3) correspondence of key themes and terms as employed throughout the whole of Haggai-Zechariah 1–8 (xlviii–lxiii), and (4) consistent use of the genre "oracular prose" as measured by the percentage distribution of prose particles (lxiii–lxvii). The charts and other data marshaled to support each of these arguments are impressive, but the authors will be criticized for what amounts to an eclectic method of literary criticism. Other scholars, using what has become the more standard methodology heavy on form and redaction criticism, will arrive at other conclusions about the literary unity of Haggai-Zechariah 1–8. This is not to say that Meyers and Meyers are wrong, but merely to point out again that one's conclusions are usually a function of one's method.

A second thesis, corollary to the first, is "that Haggai and Zechariah were the authors of virtually all that is attributed to them and that Zechariah himself, since his concluding words echo some of Haggai's themes, had a composite work in mind" (xlvi). The

logical conclusion is that Zechariah himself was the author-redactor of our Haggai-Zechariah 1–8. But here, oddly, Meyers and Meyers begin to equivocate, referring to “the final editor, be it Zechariah or his disciple.” Given the chronological frame of 520–515 B.C.E., the unity of structure and thematic interests, the integrity of authorship, and Zechariah’s having a composite work in mind (all of which Meyers and Meyers insist on), surely it is an unnecessary and cumbersome elaboration of their thesis to reintroduce, perhaps as a sop to redaction critics, some “final redactor” other than Zechariah himself.

A third thesis of the work is that Haggai-Zechariah 1–8 was prepared “for presentation at the ceremony of the rededication of the temple in 515 B.C.E.” (lxviii) and that the rebuilding of the temple is “the key to understanding Zechariah” (lxxi). Since the temple and the monarchy were so closely tied in Israelite thinking, it was necessary, Meyers and Meyers theorize, for Zechariah to affirm prophetically that a temple centered society could legitimately exist even without an earthly king.

A major weakness of the volume is its complete indifference to the place of Haggai-Zechariah in the developing apocalyptic tradition in Judaism. No attempt is made to analyze the text as apocalypse. In fact there is no attempt to relate Haggai-Zechariah 1–8 to any subsequent literature—canonical, apocryphal, pseud-epigraphical, Christian, or Rabbinic. Though such omissions are perhaps defensible on narrow philosophical grounds, they are nevertheless lamentable, especially since most of the related works are also part of the Anchor Bible.

Nevertheless, Meyers and Meyers have plowed new ground. Their treatment of Haggai-Zechariah 1–8 is fresh and creative. Much of their work will be challenged, but most of the valuable work that contributes important new insights is challenged. This volume is a solid contribution to scholarship based on a thorough analysis of the data. Meyers and Meyers have not merely sifted through the work of others; they have given the rest of us something to sift.

Fondest Dream

(For Bruce R. McConkie)

Although body invaded: carnivorous cells,
spirit, still slick clean,
hoisted flesh to the pulpit.

I saw electricity arrange itself
to your image:
face, death-drawn, unadjustable
by the twist of a knob,
and words
that drained out mechanical;
but lost nothing in the translation.

Your message: atonement;
when with every reason
to have thought fall
the cruelest of seasons,
disguising decay behind color;
or, beneath linen's cover, surrendered
until wasted cold.

But each morning, dressed;
you, stretched out like Lazarus,
waiting for a public moment
to say: I have known faith . . .
and still believe;
with tears
that might have been for many reasons,
but none so lasting
as to wet Heaven's feet.

—R. Blain Andrus

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BYU Studies
Brigham Young University
1102 JKHB
Provo, Utah 84602

