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CALVIN PERRY STONE

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A Biographical Memoir by

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CALVIN PERRY STONE served as a professor of psychology at Stanford University for most of his adult career and achieved distinction as a comparative and physiological psychologist. His scientific contributions were recognized by his election to the presidency of the American Psychological Association in 1941 and to the National Academy of Sciences in 1943.

Calvin was born on a farm near Portland in Jay County, Indiana. He was the youngest son and the seventh of eight children, born to Ezekial and Emily Brinkerhoff Stone. His paternal great-grandparents were North Carolinians who moved to Ohio in 1830 and thence to Indiana two years later, where they occupied the first tract of land to be settled in Jay County. From his mother came Dutch blood. The Brinkerhoffs had first settled in New York, and, like the Stones, had gradually moved west, passing through Pennsylvania and Ohio to reach Indiana in the late nineteenth century.

The farming region in which Calvin grew up was sprinkled with relatives who, from time to time, took an active part in the affairs of his family. Significantly, the occasional teacher, minister, doctor, lawyer, or justice of the peace in the ancestral and immediate family presented hints of potentiality

and offered models for emulation to each succeeding generation.

Calvin grew up in an atmosphere of cultural change. His birth coincided almost exactly with that which historians customarily use to mark the end of the old and the beginning of a new American frontier. His lifespan corresponds to that era of American development when society became more urban and uniform than regional and rural, but in which the pioneer patterns of family organization were still embodied in a living generation.

Two special situations provide a framework wherein developed the active, agreeable, and intelligent youngster that Calvin is remembered to have been. One of these is the sharp pressure of material insecurity which, though not uncommon among farm families of the region, took a particularly dramatic, and possibly particularly stimulating, form. When Calvin was five years old his father died of pneumonia. On a bitter winter afternoon, while all of the family but Calvin were at the funeral, the house caught fire and was utterly destroyed. Although neighbors offered shelter to the horror-stricken family, Calvin's mother insisted on an attempt to restore the home. Friends and relatives rallied to build a new house and provide temporary aid during the immediate period of the catastrophe. From then on, she and the children struggled successfully to defend their independence against adversity. Farming, managing home industries, sending its members to school and to work on neighboring farms, the family built up a way of life that demonstrated convincingly the unlimited possibilities inherent in unremitting effort, competence, and courage.

The second significant aspect of the early years was the steady thrust of Calvin and his brothers and sisters toward higher learning. The source of this tendency appears to be broad, residing rather in the family and social environment

than in special pressures from Calvin's mother. The Bible constituted the whole of the family library, and her routine was too arduous to permit recreational reading. However, she seems to have provided that practical aid to her children's ambitions that permitted them to combine their duties to the family with their educational advancement. To this was added the efforts of the children themselves.

How strong was this motivation may be seen not only in its overt expression but in its results. The family disaster prevented the eldest three children from finishing their secondary education, although one of them later completed a course of nursing training. Among the remaining five, one obtained the degree of Bachelor of Arts, two the Master of Arts, and two, including Calvin, the Ph.D. The momentum demonstrated here, it may be added, has carried into the following generation. In all but two families (including one childless sister) there is at least one member who has taken a degree beyond the Bachelor of Arts; nearly each family has members who have taught or are teaching.

Calvin began school at the age of six, proceeded through the elementary school, skipped high school, and qualified for entrance into Valparaiso University in 1907, when he was fifteen years old. Combining summer work with his course of study, in order to pay his way, he obtained the degree of Bachelor of Science in 1910. This degree entitled him to teach in the secondary schools, and he spent the next three years as teacher, principal, and superintendent at Deer Creek High School. Summer school work led to the degree of Bachelor of Arts in Classics at Valparaiso in 1913. The following year he taught at the high school in Stilwell, Indiana, and then entered Indiana University. By the time he left Valparaiso his interests in advanced study were divided between medicine and the social sciences. Letters indicate that he was reading Veblen and Spencer,

the latter with great approval. Work with Ernest H. Lindley and Melvin E. Haggerty in psychology and philosophy at Indiana University apparently determined the direction his career finally took. In 1916 Haggerty moved to the University of Minnesota and persuaded Calvin to join him there as a doctoral candidate. In view of the extended program of study lying ahead, Calvin sought means to enlarge his financial resources. An opportunity offered itself in the form of a position as director of research in psychology at the Indiana State Reformatory in Jeffersonville. This position he accepted in September 1916 and held it until the following summer, when he entered the U.S. Army. In the same year, on June 30, he married Minnie Ruth Kemper of Brook, Indiana, whom he had met at Valparaiso four years before.

As a student Calvin consciously sought the top of the class, and he apparently was particularly perceptive of ideas and possibilities that lay beyond the routine curriculum of the university program. Thus, he moved rapidly through the areas of teacher training, liberal arts, pre-medicine, and finally, psychology, not because of indecision but by reason of mastery and comprehension of situations and opportunities. In the usual competitive sports he showed no special talents, but as a gymnast he became so proficient as to work with professionals in his college years. His graduating class elected him as its vice-president, a member of the yearbook's board of editors, and class poet. The latter distinction—bestowed, according to the yearbook, because of "the unique unexpected combination of words which he always uses"—is memorialized in nine stanzas of heroic couplets. The final lines anticipate in a surprising way a characteristic of his later career, the capacity to be thorough:

> Oh yes, believe me, you must draw your pen,
> Not once or twice, but o'er and o'er again

Through what you've written, if you would entice
The man who read you once, to read you twice.

As a teacher in these early years, Calvin is recalled to have been effective in instruction, capable of generating enthusiasm in his classes, and gifted with the ability to import conceptions of a moral character. Of the latter, persistence, rational employment of one's capacities to reach increasingly high levels of attainment, and self-reliance were most notably recalled by his students. He appeared, to those who worked with him, to display a balance of interests and activities that gave due emphasis both to physical and intellectual effort. Teaching and learning were vocations of the highest seriousness to him. In his first year at Deer Creek at the age of eighteen, he prepared his first research paper, intending it for presentation at the County Institute. Entitled, "What a Pupil Should Know Before Being Permitted to Enter High School," it cost him "quite a large share of my spare time during the past two weeks. Much of my data, which illustrates my discussion, I obtained from special tests given Freshmen and Eighth Grade classmen. This of course required quite a lot of time. Statistic computations are not obtained without much expenditure of energy." It was with the same straightforward approach to learn that he participated actively in various county and school training programs while at Stillwel, and, in 1915, abandoned a cherished plan of going East for graduate study, in order to remain in contact with those teachers in whom he already had confidence and who were prepared to work enthusiastically with him to advance his education. By the time his education was interrupted by World War I, he had progressed to a level of professional achievement in a chosen—and, be it remembered, relatively new—field of psychology and had developed those traits of character that,

then and thereafter, made success seem to him less the result of fortune and talent than of the employment of these gifts through diligence, serious and clear intent, and self-discipline.

In August 1917, Calvin entered Officers' Candidate School at Ft. Benjamin Harrison, Indianapolis. His qualifications in psychology were immediately noted, and he was officially discharged on September 15 in order to receive a new appointment as a psychological examiner. He was first sent to Camp Taylor, Louisville, Kentucky, where his name was called to the attention of Robert M. Yerkes, then in charge of psychological services for the Army. He was commissioned as first lieutenant, Sanitary Corps, and early in 1918 he went to Camp Greenleaf, Chattanooga, for training in testing. While there he became adjutant and assistant director of training. In the period from 1918 until he was discharged on September 21, 1919, he served at Camp Pike, Arkansas; Fort Sheridan, Illinois; Camp Custer, Michigan; General Hospital 38, at Eastview, New York; and Walter Reed General Hospital. He attained the rank of captain.

During the summer of 1919, Dr. Karl Lashley invited Calvin to come to the University of Minnesota as a teaching fellow and graduate student. In the autumn, he began a heavy program of advanced work in medicine, with an emphasis on anatomy and neurology, and psychology. The two years of preparation were hectic, as any graduate student knows. But he found time to attend university concerts and to provide assistance to his wife and growing family (James, born 1918, and Robert Kemper, born 1920). He received his Ph.D. degree in June 1921, and afterward was appointed an instructor at the university. During the academic year 1921–22, he taught introductory psychology and assisted in a laboratory course in neurology. Before the end of the year, Calvin received an offer of an appointment from Dr. Lewis

M. Terman, chairman of psychology at Stanford. Dr. Lashley's letter of recommendation may be quoted—in part—as an indication of the character, training, and professional interests that were then apparent:

I can answer your inquiry concerning Dr. C. P. Stone most adequately by saying that if there were any chance for advancement for him here, we should make every effort to keep him. We have all been very favorably impressed with his work here and he bears an equally good reputation in the department of Anatomy where he took his work for a minor and where he is now doing part time teaching. In research he has shown a good bit of originality, and very great perseverance. His thesis subject included a descriptive study of the development of sexual behavior in the male rat and a correlation of this with anatomical and physiological development. He suggested the problem and planned most of it himself, showing a rather unusual independence. This year he has been continuing the same kind of work, is full of suggestions of new problems, and gives every indication that he will continue to be active in research. His interest is chiefly in the nervous and glandular mechanisms.

He would like to teach either physiological psychology, animal behavior, or functional neurology and I believe that he is well qualified to teach any of these subjects. I understand that in his work in the army he showed good executive ability.

Personally Stone is rather quiet and unassuming, slow in speech, and outwardly unemotional. For a time he showed a little tendency to overconfidence, but that has nearly cleared up and he is well-liked by students and teachers. I have always found him absolutely reliable and conscientious in detail. The responsibility of a wife and two children add to his stability.

I believe that you would find Stone entirely satisfactory for any work in the biological side of psychology. We have decided that in case of my leaving, he should be appointed to succeed me.

Stone began teaching at Stanford in the autumn of 1922. Except for the several instances to be mentioned, he declined offers to work elsewhere, and on occasions when administrative positions were made available to him, he reaffirmed his devotion to teaching and research. Intermit-

tently, he took summer positions at other institutions. In 1928 he spent his sabbatical year at the Institute for Juvenile Research, Chicago, Illinois, where he conducted the research that was published in 1932 under the title, "Wildness and Savageness in Rats of Different Strains." In 1932 he made a trip to Europe in connection with the International Congress of Psychology held in Oxford. In 1945 he spent a year at the Psychiatric Institute, in New York, as associate research psychologist. Here he carried out studies on the effects of electroconvulsive shock.

Upon arrival at Stanford, Stone immediately entered upon an active research program. When he attacked a problem he was very thorough about it, and he and his student collaborators would publish related experiments over the years. For example, he early began studies of the sexual and maternal behavior in the albino rat. Starting with an early paper (1922), he and his associates published through 1942 a total of thirty-four reports on their research. The years of World War II interrupted the research program, and after the students began to return from war service he initiated another program concerned with the effects of electroconvulsive shock (ECS), beginning in 1946. A series of fourteen papers came out during the remainder of his career, including one that appeared posthumously (1956, 1).

While the studies of sexual and maternal behavior were going on there were a number of varied studies dealing with animal behavior in the typical kinds of experimentation current in the late 1920s and 1930s, dealing with learning, maturation, and incentive motivation, chiefly using the maze and special apparatus for studying discrimination. Such studies began in 1928 and were reported intermittently through 1941, when the war interrupted the laboratory studies.

In the meantime he had interspersed studies of other

topics. One set departed from the animal experimentation and was devoted to physical and mental development in the human during puberty and early adolescence. The first of these reviewed reported cases of puberty praecox to determine the relation, if any, to mental development (1927, 2). The same topic was reviewed again some years later (1936, 5). During the years 1934 to 1939, Stone and Roger Barker published six papers on physical development, menarcheal age, and related psychological changes by studying large samples of college women.

World War II had its effect on universities, and it was a skeletal staff that remained to teach the few students enrolled in the classes to be taught, as most of the male students and many of the female students left to work in war-connected activities. Stone continued his teaching but his research suffered. He had been elected president of the American Psychological Association to serve for the year 1941–42. Transportation difficulties resulted in cancellation of the national meeting scheduled for New York in the fall of 1942, so that he had no opportunity to present his presidential address, although he was able to publish it in the usual manner (1943, 1). His scientific status was recognized by his election to the National Academy of Sciences in 1943.

Although continuing his duties at Stanford, Stone also played an important role at the national level by serving as one of a seven-member Subcommittee on Survey and Planning of the Emergency Committee at the invitation of and under the chairmanship of Robert M. Yerkes, with whom he had worked in World War I. The subcommittee had responsibility for looking toward the normalization of psychology after the war. As its most significant contribution, it proposed a unification of psychology at the national level, in view of rifts growing among the several psychological

societies. The subcommittee also took the initiative in proposing an Intersociety Constitutional Convention, ultimately meeting in New York in May 1943, under the chairmanship of E. G. Boring. The convention decided to retain the American Psychological Association as the overall organization, but proposed a new set of bylaws for the APA, including a divisional structure to give a degree of autonomy to the various specialized topical or professional interests of the constituencies. Its recommendations were soon adopted.

As the war came to an end and the students returned to graduate study in the universities, Stone's research again flourished.

Despite returning to the laboratory he found time for other professional responsibilities, such as editing the *Journal of Comparative and Physiological Psychology*, in 1947–50. He also took on the editorship of the *Annual Review of Psychology*, and remained its editor for the first six volumes, 1950–55.

In the laboratory he studied the effects of ECS, a technique that he had observed in use with psychiatric patients, during his sabbatical year at the New York Psychiatric Institute in 1945. The first of his experimental studies, using white rats as subjects, appeared in 1946 (1946, 1), and altogether twelve studies were published, the last posthumously (1956, 1).

Despite a severe heart attack in December of 1948, Stone soon resumed teaching. He edited a book, *Comparative Psychology* (1951), to which he also contributed. His ECS research continued, and he presently undertook his final set of experiments on the effects of hypophysectomy, remaining deeply involved until his death by heart attack just after Christmas, 1954. Several papers were still in press.

As a teacher, Stone made his courses memorable for their richness of content and the thoroughness with which he

treated the material. Most of his courses were of a specialized nature, but that on abnormal psychology was well attended as an elective course by students outside the field of psychology. His effectiveness as a lecturer arose from clarity in language and in organization. By constantly reviewing and revising his lectures and syllabi (as his files attest), he brought fresh material to his classes. It is said that his was the first course on Freudian psychology to be given in an American university; it is true that his last presentation of the course in abnormal psychology, in the quarter before his death, was as advanced, in terms of present knowledge, as the first one had been in 1922.

The standards he set for his students were invariably high. Intent observations of his students' academic progress were matched by constant interest in their personal welfare. His last graduate student has spoken of him as a second father as well as a distinguished teacher.

In his professional attitudes, Dr. Stone was fully committed to the ideals of scientific scholarship that he had received from his first teachers. He began his research before he reached Stanford; his experimental program was interrupted only for a brief period in 1932, when he was in Europe, and for a few months in 1949, while in ill health. In instances when he was urged to take time enough to write books, he expressed his conviction that a continuous series of monographic reports would better contribute to current knowledge in psychology than would extended treatises that could only present what was already known. It was his practice to carry forward his research with his hands as well as with his mind. His family and students recall that his schedule brought him to his animal laboratory at early hours each day. In the early period, he himself fed, watered, cleaned, and housed the colonies of rats, guinea pigs, canaries, pigeons, rabbits, chicks, cats, dogs, and mon-

keys that, at one or more times, he used experimentally. Much of the apparatus used in his experiments he designed or built himself. Experiments that students carried on under his direction were watched at every stage. Publications that bore his name as co-author with his students were fully guaranteed in their authenticity.

Calvin's writing was never fluent, and he exerted much effort to develop the capacity to express his ideas and to report his data with directness, economy, and clarity. He gave the same attention to manuscripts that he received; those that graduate students prepared were more carefully reviewed from the literary as well as from the scientific standpoint. His reading was largely in his professional field; in belles lettres, he was fond of poetry, and all his life he could quote passages from nineteenth-century American poets.

His place in the university community was unostentatious but highly respected. Relationships with colleagues were always cordial and generous. He fitted well into all professional groups and met students easily and with an understanding of their interests.

Early in Stone's career, the wife of his department chairman once remarked that, unlike many, he never sacrificed his career to domestic affairs, nor family activities to professional advancement. He struck a balance in all that he undertook. Until late in life, he was regularly on the tennis court and always was active in the garden and in the routines of domestic economy. The education and recreation of his children were matters that always engaged his attention, and although he himself was proficient in none of the arts, he encouraged their practice in the family. Time was set aside on week-ends and during the summer for family activities; in the shorter periods, for sports and outings, and in the longer periods, for extended trips to points of interest in the West and across the United States. He vis-

ited his mother, brothers, and sisters on numerous occasions in the Middle West, and he wrote voluminously to colleagues, friends, and relatives. Stone often served as family counselor to friends and neighbors. Family relationships were characterized throughout by a serious respect for individuality and an affection that expressed itself by positive action as well as by words. A concern with the development, in his children, of a high sense of personal responsibility was accompanied by a sensitivity to their limitations as well as to their capacities.

In December 1948, while he was conducting a class on a field trip to an asylum, Calvin suffered a heart attack. Although the injury to the heart was extremely serious, he recovered sufficiently to resume teaching in March and took up laboratory activities again in the autumn. For the next six years he carried on a full teaching program and organized other professional activities in such a way that he continued with the most important of them. He was, in fact, never free from discomfort, but his death on December 28, 1954, came suddenly during the early evening after a particularly pleasant Christmas season. In the days immediately before his death, he had been reading the letters of Freud, and his comments on them formed the central topic of several holiday letters to old friends. Arising from his observations on Freud's career were certain significant implications about his own: Freud, he thought, characteristically failed to work long enough in any one area to "sift the seed from chaff and to discard [most? many?] of his 'hunches.'" That he considered that Freud "suffered" from this quality suggests his own admiration for steady and cautious pursuit of experimental knowledge.

The effects of this lifelong conception are epitomized in the comment of a colleague: It was not only that his loss

would be irreplaceable in the special field of research that he had developed; more than that, "he knew so much."

As a scientist, Stone reveals himself in his comment on his own research, which, one correspondent noted, had turned in a surprising direction late in life. He wrote on the eve of his death:

"During the past two years fortune has smiled again in pointing out a relatively virgin field of animal research suited to my present limitations in time for laboratory studies. . . . I now intend to put my nose to the grindstone with hypophyseal research for a few years; at least, until my curiosity is satisfied."

I WISH TO ACKNOWLEDGE the great assistance provided to me in the preparation of his father's biography by James H. Stone, Ph.D., Emeritus Professor of Humanities at San Francisco State University.

The material he furnished me included a complete collection of the reprints of his father's scientific writings, case-bound in four large volumes, and a biographical sketch that he, Dr. James H. Stone, prepared, derived from family documents, including letters and personal reminiscences.

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