PROFESSIONAL RECOGNITION

REGISTRATION OF ENGINEERS

The move to register and license the practice of engineers by the states began in 1907. By 1936 thirty-five states had such laws. Since then all fifty states, as well as the Panama Canal Zone, District of Columbia, Guam, Puerto Rico and the Virgin Islands have licensing boards. Typically, the statutes and organizations are not uniform. In an effort to effect some degree of consistency the National Council of State Boards of Engineering Examiners (NCSBEE) was established in 1919. Through this organization much has been done to eliminate confusion. Also, most states have worked out agreements of reciprocity. Happily, the Council's name has since been shortened to National Council of Engineering Examiners (NCEE).

The late 1920's and most of the 1930's constituted a period of rapid growth and strengthening of the registration and licensing laws in several states. As might be expected this created, particularly among engineering educators, the assumption that within a few years *all* engineers would be required to obtain a license if they were to practice engineering in any manner. That this did not come to pass in no way lessened the sense of urgency and concern. One must remember that the 1930's were the time of the Great Depression with its attendant insecurities and uncertainties.

During the period of the Fraternity's consolidation (1928-34), records seem to indicate that the attention and energies of the fraternal leaders, *i.e.*, the national officers, were largely absorbed by the formation and operation of the *new Keramos*. Nevertheless, some of these leaders were involved in the movement which sought recognition of the ceramic engineering profession. For several this activity was to become all absorbing.

The following events occurred more or less contemporaneously; however, for the sake of clarity they will be presented relative to each of the several organizations involved.

THE AMERICAN CERAMIC SOCIETY (ACS)

Though the record has not been well documented, the available material indicates that around 1930, while Beta Pi Kappa and Keramos were busy with their prospective merger, a group of ceramic engineers were attempting to organize The American Institute of Ceramic Engineers. It appears further that these efforts were being made without informing ACS' Secretary, Ross C. Purdy° yet he seems to have known of it. Purdy was strongly opposed to the move believing that such an organization would be a competitor to the ACS. On that basis, Purdy was thought to have asked General Edward Orton, Jr.° held in veneration by all ceramists, to find some way of blocking this action.

Dr. George A. Bole°, then president of the ACS, appointed a special committee with a very ambiguous title*, Committee on Classification.[1] This extraordinary committee was chaired by America's most distinguished ceramist, General Edward Orton, Jr., with a membership of nine past presidents, one of whom was A. F. Greaves-Walker°, and one former vice-president. Though the committee made its report in February, 1930, quite contrary to precedence, it was not published until the following September. It was this report that recommended the revision of the Society's Constitution and Bylaws enabling the establishment of the member grade of *Fellow*. It would seem that General Orton believed that this action had solved all of the problems. In his wide-ranging address[2] of the following year there is no word concerning engineering or of the professional recognition problem. Nevertheless, in 1936 Greaves-Walker wrote[3] that the "Fellowship resulted as a compromise" and that it "has not placed the ceramic engineer in a position to gain recognition by the other engineering societies...."

The Fraternity's position was stated in its first newsletter[4] "This is not 'just another' organization...but one that can become of the greatest of value to all ceramists by gaining for them professional recognition on par with other branches of engineering...." By the winter of 1933 the ACS had become aware of the situation. An editorial titled "Reasons for Ceramic Engineering Specialization,"[5] began with the sentence, "Ceramics is a branch of engineering, the same as electrical, civil, mechanical, and mining." At the same time Greaves-Walker was urging stronger Keramos support for the ceramic engineering departments and for the profession. He advocated the appointment of a Keramos committee to make a study of curricula to the end of providing recognition of those approved.

The Keramos newsletter titled, "Special Message from Keramos"[6] announced the appointment by Grand President, Fred L. Steinhoff°, of five committees. They are recorded here to indicate the direction of Keramos' activities in this critical period and the caliber of the participants:

(1) Committee on Graduate Placement**
A. H. Fessler ° (Ill.), A. C. Spark Plug Co., Chairman
W. L. Fabianic ° (N.Y.), Owens-Illinois Glass Co.
R. E. Birch ° (Ohio), Harbison-Walker Refractories Co.
H. G. Wolfram, ° (Ill.), PEMCO Corp.

(2) Committee on Research
J. L. Carruthers (Ohio), Ohio State University, Chairman
A. McK. Greaves-Walker ° (N.C.), Libbey-Owens-Ford Glass Co.
C. R. Amberg (N.Y.), Alfred University
H. W. Thiemecke ° (Ohio), Homer Laughlin China Co.
A. I. Andress (Ill.), University of Illinois
R. S. Bradley (Ill.), A. P. Green Fire Brick Co.

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* *The ambiguity of the name was such as to cause the Chairman to prepare extensive introductory paragraphs which included a remarkable analysis of the motives and purposes of technical societies.*

** *State abbreviation indicates chapter affiliation.*

(3) Committee on Education
S. R. Scholes ° (N.Y.), Alfred University, Chairman
E. H. Shands (N.C.), Detroit Vapor Stove Co.
W. C. Rueckel (Ohio), Ohio State University
R. F. Sherwood ° (N.Y.), Sherwood Porcelain Co.
(4) Committee on Publicity
A. F. Greaves-Walker (Ohio), N. C. State College
(5) Committee on Professional Status
M. E. Holmes (N.Y.), Alfred University, Chairman
Tom Falknor (Ohio), Edgar Clay Co.
H. L. Cook (Ill.), Norge Co.
A. F. Greaves-Walker (Ohio), N. C. State College.

On February 17, 1935, the department heads of the ceramic engineering, technology and art departments of the universities of the United States and Canada formed the Association of Ceramic Educators (ACE). Its objectives were (1) promotion of ceramic education, (2) improving teaching facilities and (3) standardizing fundamental curricula in the various branches of instruction. The first officers were A. S. Watts°, Ohio State University, President and A. F. Greaves-Walker, N. C. State College, Secretary. During the year 1937-38 the ACE became the Ceramic Education Council (CEC), an affiliate of the American Ceramic Society (ACS).

At the April 1, 1936 Convocation, the Keramos' Committee on Professional Status presented its report including a statement of goals. These were to "improve the standing of the ceramic engineer in the eyes of laymen and in engineering circles and to work for the professional licensing of ceramic engineers as based on specialized examinations." The body of the report presented the status of the ceramic engineer with respect to several national engineering organizations with which the Committee was in contact.

The ACS Committee on Education was beginning to take an active interest in the plight of the ceramic engineer and was "working on the possibility of setting up a method of accrediting schools teaching ceramics and ceramic engineering...." In the course of the Committee's study it was "learned that the Committee on Engineering Schools of the Engineers' Council for Professional Development (ECPD) had been working on a similar project, covering all phases of engineering, for the last three years."

At this point it seems appropriate to shift our attention to the other organizations involved, returning to the ACS under the subsection dealing with the Institute of Ceramic Engineers.

ENGINEERS' COUNCIL FOR PROFESSIONAL DEVELOPMENT (ECPD)

As originally organized ECPD[7] was a "joint body concerned with the enhancement of the status of the engineer and of the profession." Its seven constituent bodies were the American Society of Civil Engineers (ASCE), the American Institute of Mining and Metallurgical Engineers (AIME), the

American Society of Mechanical Engineers (ASME), the American Institute of Electrical Engineers (AIEE), the American Institute of Chemical Engineers (AIChE) together with the Society for the Promotion of Engineering (SPEE) later renamed the American Society for Engineering Education (ASEE) and the National Council of State Boards of Engineering Examiners (NCSBEE) later renamed the National Council of Engineering Examiners (NCEE). These organizations* had joined together "as an agency for the accrediting of colleges of engineering" and for the "purpose of performing through a single accrediting by one body representing the organized profession. ..." Further, the report stated that "each curriculum offered by individual institutions will be accredited separately" and listed six major curricula: civil, chemical, electrical, mechanical, metallurgical and mining engineering. The report continued, "...such other engineering curricula as the institution may desire to submit for accrediting will also be considered." The newer and smaller curricula were listed tentatively by ECPD as "specialized" and were generally to be assigned to one of the older (ECPD member) branches for review. Ceramic engineering was considered to be a specialty of chemical engineering and was to be adjudged for accreditation under chemical engineering rules. According to Birch, Greaves-Walker always ended a discussion of this problem with, "1894, the birth date of ceramic engineering antedated that of chemical engineering by some years."

The interpretation and application of ECPD's policy statement deeply concerned the ceramic engineering educators for the very basic reason that they were on the outside and had no voice in ECPD. Greaves-Walker expressed his distress in the Keramos newsletter of Feb. 1, 1936, "...the Executive Council (of Keramos) has devoted considerable efforts towards having ceramic engineering recognized as a distinct branch of engineering and not as has so generally been the case, considering it as a subdivision of chemical or mining engineering."

At the convocation held the following April (1936) Dean M. E. Holmes°, as chairman of the Committee on Professional Status[8] gave a detailed report. His encouraging statements were:

"Our campaign for recognition of ceramic engineering as a fundamental and independent branch of engineering has won sympathetic support but it (our campaign) is opposed to the trend in engineering societies and state boards of engineering examiners. The general trend is toward less specialization instead of more..."

"The SPEE welcomes more ceramic activity...."

"The NCSBEE are more or less committed to a policy not favorable to our proposals but they will carefully consider our proposals and arrange for a hearing at their next convention."

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* *The first four of the group were known collectively as the founder societies.*

The less favorable statements were:

Some states have taken a definite stand against licensing ceramic engineers.

The New York officials are quite definitely opposed to our proposition but will keep the door open...

Dean Holmes' recommendations were that the committee should:

1. Continue its efforts....

2. Induce the ACS to participate in Keramos' campaign by correspondence with the various agencies.

3. Induce the heads of the various ceramic schools to back up the Keramos program.

4. Send official representatives to the NCSBEE convention.

5. Promote more activity on the part of ceramists in the SPEE.

6. Recommend that the ACS and all other ceramic organizations abandon the slogan, "Ceramics is the Chemistry of the Silicate Minerals," which negates the endeavor to gain recognition for ceramic engineering as a separate and fundamental branch of engineering.

NATIONAL COUNCIL OF STATE BOARDS OF ENGINEERING EXAMINERS (NCSBEE)

The first door to open a crack to Keramos' drive for professional recognition was that of NCSBEE. As a result of Holmes' good work Keramos was extended an invitation to present their case at the NCSBEE's next convention (Oct. 1936). Fortunately specialized examinations and separate licensing of the various branches of engineering were to be topics of discussion even though contrary to the current trends. Because of travel costs and Greaves-Walker being the nearest to the convention site, he was selected by President R. E. Birch° to represent Keramos. That he did attend was a fortunate happening.

Greaves-Walker[9] learned at first hand that "it was proposed and generally accepted that membership in a professional grade of some recognized engineering society should be a minimum requirement for recognition of a professional engineer" and "at present the ceramic engineer could not qualify under the definition and opened three avenues for consideration.

"(1) Organize within the ACS a professional grade with requirements for admission equal to that of the Founder Societies and then apply to ECPD for recognition and participation,

"(2) Organize an American Institute of Ceramic Engineers from the present membership of Keramos,

"(3) Devise some means of reorganizing Keramos so as to provide a professional grade for ceramic engineers."

In response to Greaves-Walker's recommendations Birch wrote[10] "I cannot see that the idea of making Keramos membership analogous to the grade of professional engineer would be workable. This would require a reorganization of Keramos whose members are now too largely selected on a basis of pre-professional experience to allow this end to be achieved."

In the same letter he suggested that "the Executive Committee (Council) of Keramos consider presenting the whole affair to the Trustees of the American Ceramic Society." C. M. Dodd°[11] then Grand Secretary wrote (Dec. 12) in support of this position. Immediately after this exchange of letters, Birch (Dec. 15) requested Greaves-Walker to prepare for "a presentation of the problem to the trustees of the ACS." By December 22 Greaves-Walker[12] had informed Birch that "there is no possible way of the Society (ACS) taking the place of a professional engineering society...." He went on to state that he would "proceed to draw plans for such an organization..." and that it "must meet the approval of the engineering bodies whether the details meet with our entire approval or not."

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS (AIMME)

Greaves-Walker seemed to have achieved considerable rapport with the AIMME members he had met at the NCSBEE convention of October, 1936. They found, to their mutual appreciation, that the mining, metallurgical and ceramic engineering professions had a great deal in common especially with problems created by lack of specialty examinations of the licensing boards. As an outgrowth of this encounter and bolstered by subsequent correspondence, ACS President F. C. Flint was invited by the Minerals Industries Educational Division, AIMME, to attend their convention of February, 1937, representing the ceramic engineers. Flint appointed Greaves-Walker to attend in his stead, an invitation he gladly accepted. Immediately after this meeting Greaves-Walker, in a letter to Fred Steinhoff, speculated that the idea behind this invitation was to get the ceramic engineers to join "on an equal footing" in the joint problems with ECPD and NCSBEE.

In December Greaves-Walker received directly an invitation to attend the (February) 1938 AIMME convention. On this occasion he accepted representing both the ACS and Keramos. One of the accomplishments of this meeting was to develop a preliminary delineation of the professional boundaries between mining, metallugrical and ceramic engineering.

This amicable association continued through the following years largely because of the personal rapport of Greaves-Walker.

INSTITUTE OF CERAMIC ENGINEERS (ICE)

The Institute of Ceramic Engineers (ICE) later to add "national" to its name (NICE) underwent a lengthy gestation. In a previous section mention was made of an abortive attempt in 1930 to form the American Institute of Ceramic Engineers which resulted in the establishment of the Fellow grade within the ACS. Praiseworthy as that was, it did not solve the problem of professional recognition for the engineers. At about this time Greaves-Walker began probing for information from his recently established contacts within NCSBEE, notably with Dr. D. B. Steinman, a distinguished consulting civil engineer and chairman of the New York

State Board of Engineering Examiners. Dr. Steinman applauded the concept of an organization limited in membership "to those who have been registered as professional engineers," deplored the establishment of another engineering society and stated his belief that it would be "practically impossible for a newer or smaller organization to break into the oligarchy or closed corporation which the five larger engineering societies have established for themselves." Greaves-Walker chose to go ahead with his plans, probably greatly influenced by fast-breaking developments.

In order to appreciate the complexity and drama of the situation it is necessary to realize that no less than four rather closely interrelated ceramic groups, each with separate perspectives and objectives, were attempting to speak for the ceramic engineers*. Keramos developed the most prominent role, led and pushed by Greaves-Walker (Herald and Chairman of its Education Committee), forcefully backed by R. E. Birch (President), striving for professional recognition and licensing. Secondly, the Association of Ceramic Educators (AEC) was seeking to regularize curricula and gain accreditation. As late as January 12, 1937, there seemed to be no great drive for action. The organization was represented by M. E. Holmes (Chairman, Curriculum Committee), A. S. Watts (President) and surprisingly, A. F. Greaves-Walker (Secretary). Thirdly, the Fellows of ACS, A. S. Watts (Dean of the Fellows) and C. W. Parmelee° (Chairman, Education Committee) were attempting to maintain a stablizing overview of developments. Finally, the Committee on Education of the ACS, chaired by H. E. White, was attempting to handle all aspects of the ceramic engineering recognition and education problems, past, present and future. The committee was even writing curricula outlines and guidelines despite the fact that there were no educator members. Matters were further complicated in that all of the principal participants were forceful, outspoken individualists.

Winning ACS Approval. Within a few days after the exchange of letters between Greaves-Walker and Steinman, related in the preceding pages, Greaves-Walker as a member of the Fellows' Committee on Ceramic Education, received a prepresentation copy of the report of the ACS's Committee on Education 1936. This catalyzed Greaves-Walker to action. Immediately (Dec. 31, 1936) he requested ACS President F. C. Flint to hold up the report and a few days later recommended, in a five-page critique, that it be returned to the Committee for further study without Board of Trustee action. He concluded with the statement that Keramos expected to have a report to submit to the Society's Board. Copies were sent to H. E. White, A. S. Watts and R. E. Birch. Apparently Flint followed Greaves-Walker's recommendations, for on January 13, White wrote a conciliatory letter to Greaves-Walker who responded in kind. This was followed by agreement that all four educational committees would meet

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* *One wonders if the average ceramic engineer had any inkling of the battle that was being waged on his behalf. Certainly this writer did not.*

jointly in a special session of the ACS's Trustees on January 26 and 27, 1937.

In the interim, Greaves-Walker, Birch and D. G. Bennett° built a further background of information and opinion which resulted in a well thought out plan[13] of action. This was presented at the aforementioned special session. Besides Greaves-Walker representing Keramos, A. S. Watts as Dean of Fellows and President of the ACE, J. L. Carruthers, representing the Education Committee of the Ceramic Educators, C. W. Parmelee, Chairman of the Fellows Education Committee and H. E. White attended this session. A few days after the meeting Greaves-Walker wrote[14] "White changed his report[15] on ceramic education ... and also adopted a definition of ceramic engineering, which ECPD had requested, dictated by Watts, Parmelee, Carruthers and myself. We also outlined a curriculum which we felt would meet ECPD requirements and he (White) adopted it in toto."

The reorganization of the ACS's Committee on Education to include a subcommittee[16] composed entirely of ceramic engineers was an important consideration. For the first time, the ceramic engineers were included in the educational councils of the Society. Birch and Greaves-Walker were appointed to that subcommittee.

The Trustees approved in principle the recommendations for reorganization of the Society's structure to include an Institute of Ceramic Engineers. This approval resulted in the proposed changes in the ACS's Constitution[17] [18] later approved by membership mail ballot. This action then required changes to the Society's Bylaws[19] adopted by the Board of Trustees in June, 1937. The new Institute of Ceramic Engineers was legalized; but, legalization did not mean that the Institute was established.

Returning to February, Greaves-Walker had written Birch[14] that ACS President Flint had indicated "it would be good psychology for a group of ceramic engineers to petition the Board of Trustees of the ACS to set up the Institute of Ceramic Engineers within the Society. He and others felt that the proposal might go over with less resistance than if it came from Keramos, an outside organization." Accordingly a formal petition was signed by Birch, Bennett, Dodd, Steinhoff, Wolfram and Greaves-Walker as ceramic engineering members of ACS not as Keramos officers. Shortly thereafter, Greaves-Walker suggested to Flint "that the Executive Council of Keramos be appointed as an organizing committee." It was not accepted though Greaves-Walker seemed to have thought so. In a letter addressed to Birch and Dodd (Mar. 15, 1937) he wrote, "My conversations with Francis Flint convince me that he expects the Keramos officers to take the lead in organizing and setting up the Institute." Two days earlier (Mar. 13) he had written to Birch that "Francis Flint wishes Keramos to remain in the background as much as possible and...get the engineers together without the fraternity appearing to direct affairs." The wording is a little ambiguous and indicates a probable misunderstanding.

Keramos did hold an "Open Meeting for Ceramic Engineers," March

24, 1937, at the Waldorf-Astoria Hotel, New York City[20] with 43 in attendance. Birch presided. He stated that "the meeting had been called to discuss the organization of an Institute of Ceramic Engineers" and that the ACS had made changes which would allow it. Greaves-Walker spoke on the work of the ECPD and the SPEE and the efforts of Keramos. He described the character of the projected memberships within the Institute. McAfee, Chairman ACS Committee on Rules, "told of the work of the Board of Trustees (ACS) and their desire to cooperate."

Greaves-Walker "moved that a temporary organization of ceramic engineers be formed by this group (the 43 at the meeting) to become active when the ACS passes the necessary enabling legislation." The motion was seconded; however, no vote seems to have been taken. Anyway, at this point it would appear that the meeting's decorum, temporarily at least, had departed. The official minutes give hardly a hint of the pyrotechnics. Appreciation can be given best by quoting portions of Ray Birch's recollections[21] forty years later, of that evening:

"A lasting impression I will always carry with me are the parlimentary difficulties that confronted us ...I served as Chairman, with Arthur (Greaves-Walker) at my side. All of the diverse elements were represented. Men who had graduated in Ceramic Engineering. Engineers from other disciplines. Chemists. Physicists. Self-taughts. The means of molding all of these into a single new engineering society had not yet been worked out, but we had tentative proposals. They were not met with uniform enthusiasm. In fact the tenor of the meeting was best described by the word pandemonium. Or so it seemed to me. Personally my parliamentary skills seemed inadequate, putting me into a situation reminiscent of Sam Rayburn at those tempestuous Democratic national conventions. ... What a shame this antedated audio-taping. The differences were *very* real; the fact that we lived through and evolved a strong society as NICE and its supporting honor society,* Keramos, constitutes a strong tribute to Greaves-Walker and those who supported him, and the others who have subsequently guided the Societies."

Apparently no motion was passed; however, Prof. R. K. Hursh° suggested "That a committee on organization, rules and qualification of membership be named by the Board of Trustees of the ACS to set up an organization and report to the group of ceramic engineers."

Organization Completed. During the following month (April 1937) ACS's Board of Trustees proceeded with the business of organizing and establishing the Institute. An organizing committee consisting of J. L. Carruthers (Chairman), R. E. Birch, C. M. Dodd, E. H. Fritz and H. E. White was appointed to recommend a method of organization. Greaves-Walker had been asked to be a member of this committee but declined and proposed that Carruthers be named in his place. His declina-

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* *With all respect to Past President Birch, it seems unfortunate that confusion still exists - Keramos is a professional fraternity -not an honor society. WWK*

tion was based on his belief that the ACS officers had ignored the wishes of the ceramic engineers as expressed at the New York open meeting.

By June everything seemed to be very vague and very little was happening. Steinhoff titled his June 1937 editorial in *Ceramic Industry* "Ceramic Engineers Need Professional Recognition," thereby hoping to promote action. As far as the fraternity records indicate, no action towards organization occurred until November 23, 1937, when Carruthers, as Temporary Chairman for the Institute of Ceramic Engineers, sent out a form letter on ACS stationery inviting applications for membership in the new Institute. Those accepted would be designated as belonging to the "Founders Group." A closing date of December 9 was set allowing just 16 days to make application. At that time Carruthers was to appoint Rules and Membership committees. The Rules Committee was to draft operational procedures which were to be approved by the Founders Group and the ACS Board of Trustees. The Membership Committee was to establish procedures for receiving and approving new membership allocations. Later a Nominating Committee was to be named which would present a list of officer candidates. Vote was to be completed prior to the 1938 ACS Annual Meeting. Things were really beginning to move!

By December 20, Carruthers had designated the Rules Committee with A. F. Greaves-Walker as chairman. The roster of the Founders Group was published in March[22] and in June the officers for 1938-39 were announced.[23] These first officers were:

A. F. Greaves-Walker, President
J. L. Carruthers, Vice-President
F. L. Steinhoff, Hon. Past-President
C. M. Dodd, Secretary
R. E. Birch, Treasurer and ACS Trustee.

THE WIND-DOWN OF KERAMOS' INVOLVEMENT

All of the officers of the new ICE with the exception of Carruthers, were members of the Executive Council of Keramos. There was every expectation that everything would go forward "under new management." Essentially this was so; however, as also was to be expected, there was a considerable period of time during which activity was diffused between the two organizations. Gradually the action shifted to ICE. As far as Keramos was concerned the major battles had been fought and won with the fruits of accomplishment as well as the continuing problems of professional recognition being turned over to the new organization. As a consequence Keramos had no well defined "national mission." The Executive Council members were largely engrossed with their new assignments.

It is a certitude that the majority of the undergraduate members had but a passing interest in the battles for national recognition. On their own campus they *had recognition* largely of their own making. The students' major problem during the 1930's was obtaining enough money to remain students. Because engineering students are notoriously apolitical, their interests were taken over by studies, general campus activities and dating

as soon as a solution to their most pressing problem was achieved. As the decade neared its end, war in Europe began slowly to command their attention. All of this changed abruptly on December 7, 1941, with the attack on Pearl Harbor. The nation was at war!

We have reached this point too quickly. For a fuller understanding of Keramos and the ceramic engineering profession we must pick up the loose ends of the recognition problem which 40 years later is still not wholly solved.

Society for the Promotion of Engineering Education (SPEE). Greaves-Walker was appointed representative of the ACE to the June 1937 meeting of SPEE. At this meeting he was one of the principal organizers of a Committee on Ceramic Engineering as part of the Division of Mineral Technology. Greaves-Walker was elected vice-chairman of the Division, with J. L. Carruthers as Chairman and C. M. Dodd as Secretary of the Committee. This was the first official recognition of ceramic engineers by SPEE. In 1943 Greaves-Walker as a ceramic engineer was elected to SPEE's Executive Council representing the Division of Mineral Technology.

With the passage of the years the names have changed but the functions have remained about the same. The Society became the American Society of Engineering Education (ASEE) and the Division took on the name of Mineral Engineering Division. Ceramic engineers, mostly educators, participate as individual members.

National Council of State Boards of Engineering Examiners (NCSBEE). Greaves-Walker was again invited to represent the ceramic engineers (Keramos) at NCSBEE's annual meeting (Oct. 1937). Strongly influenced by the SPEE action in June, Greaves-Walker received assurances from representatives of a number of state boards that ceramic engineers would be considered as members of an independent branch of engineering and would be examined accordingly.

As was mentioned in an earlier section, the Council has been renamed as the National Council of Engineering Examiners (NCEE). Its work continues through its now 56 constituent boards. Ceramic engineers are represented through the National Institute of Ceramic Engineers (NICE) formerly (ICE).

American Institute of Mining and Metallurgical Engineers (AIMME). As was mentioned earlier Greaves-Walker represented both the ACS and Keramos at the February, 1938 AIMME convention. At this meeting he was assured that AIMME would give the ceramic engineers "every assistance possible in maintaining their place in the mineral industries group and of attaining their national aims."[24] For the purpose of giving ceramic engineers representation with ECPD Greaves-Walker was appointed in 1940 by AIMME to a three-year term as a member of the Council. In 1944 he was reappointed for a second three-year term. Further comment will be made presently.

Engineer's Council for Professional Development (ECPD). While Greaves-Walker was attending the October 1937 Convention of the

NCSBEE it was learned that ECPD had recognized ceramic engineering as an independent field of engineering and had granted accreditation to the ceramic engineering curricula of six institutions. These were the University of Illinois, Missouri School of Mines and Metallurgy, the New York State College of Ceramics (at Alfred University), North Carolina State College, Ohio State University and the University of Washington.[25] Eventually the number of accredited curricula grew to 14. Sad to relate it has dwindled since to less than 10.

As was briefly mentioned in the preceding section, during the years 1940-47 the ceramic engineers were represented on the Council through the AIMME in the person of A. F. Greaves-Walker.

National Institute of Ceramic Engineers (NICE). During Greaves-Walker's tenure on the ECPD "effort was made to have the ceramic engineers admitted to membership in ECPD. Twice committees were appointed to consider their admission, as well as other ... organizations ... but each time the report was unfavorable." This was principally due to the necessity of changing the ECPD constitution and the fear for its overexpansion. However, members of the Institute of Ceramic Engineers were appointed to ECPD's seven Regional Inspection Committees examining ceramic engineering curricula.[24] Shortly thereafter ICE (later NICE) was granted affiliate membership in ECPD. Much more recently (1977) full membership was accorded.

During these later years NICE became a full participating member in the Engineers' Joint Council (EJC)* with an officer on its board of directors. NICE has enjoyed a healthy growth. The Founders Group of 155 has since grown to nearly 10 times that size, a substantial group yet small compared to the more than 30,000 members in each of the major engineering societies.

JUSTIFIABLE PRIDE OF ACCOMPLISHMENT

The foregoing pages have described in some detail the problems, struggles and achievements in gaining professional recognition for ceramic engineers. To imagine that a newly organized fraternity consisting of four small chapters could accomplish all that they did borders on the unbelievable.

It is questionable that it could have happened had it not been for Arthur Frederick Greaves-Walker. However, even he could not have done it without the backing and assistance of his associates, especially Ray Birch, Chuck Dodd, Fred Steinhoff, Jack Carruthers, Arthur Watts, Ralph Hursh, Sam Scholes, Cullen Parmelee and a host of others. We later arrivals on the scene should, and hopefully do, pay homage to these dedicated individuals. They have made our professional tasks much, much easier.

Keramos members can take justifiable pride in the accomplishments of their earlier members.

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* *The EJC superseded by the American Association of Engineers (AAES)*[26].

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