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EDITORIAL

This issue of TPG carries an informative and sobering report on attrition among geologists. It documents what has been known for a long time, namely that a considerable number of geologists have become ex-geologists through no intent of their own. Some are young and others are along in years; some are philosophical about the turn of events and others are bitter. A major factor in the situation, of course, is the capricious attitude of many companies, especially oil companies, toward geological hiring and firing. This has been documented again and again since the pie fell out of the sky in the late 1950s. Not only have specific companies earned a bad reputation among geologists, but the whole profession of petroleum geology has suffered, particularly in the eyes of students. Why, students ask, should they go into a field with so dismal a record of professional-employment relations?

A statement that has been heard occasionally over the years, and reappears in the "attrition report," is that university departments of geology are in part responsible for the employment mess, because they have produced too many geology graduates. Logical defense of this argument, even by a company personnel manager, would be exceedingly difficult. It is analogous to saying that today's traffic jams and junk-car gluts are Detroit's fault, because it produces too many automobiles. Obviously, there's another little factor in there: the consumer. If the demand weren't there the cars wouldn't pour forth in such numbers.

If a young man gets a degree from a college or university, goes to work for an oil company, and after 10 or 15 years is duly fired, it defies reason to blame his alma mater because she graduated him. After all, he was good enough for the company when they hired him. Who, one may ask, is kidding whom?

Put yourself in the place of the professor when an intelligent-looking young man comes in and says he's got A's in a couple of introductory courses in geology, has thought it over, and wants to major in that subject. What would you do under these circumstances -- tell him to get lost? Tell him it's a bad scene, there are too many geologists already? Tell him to go major in sociology? Of course you wouldn't; and neither will the professor. Few departments of geology have either the wish or the authority to tell a student that he can't major in geology if he wants to. You don't just tell students to go away.

Of course departments can, and do, make clear to each prospective major the employment prospects in the field of geology, particularly in that specialty in which he is interested -- or rather, what these employment prospects will be, maybe, in a few years when he graduates. Professors find, indeed, that a good many prospective majors already have a fair idea of which geological fields are good bets for long-term advancement and which are not.

Departments also can, and do, see that the weak students are weeded out, along with those temperamentally unsuited to the profession of geology. Departments can, and do, attempt to turn out the best-prepared and best-oriented people that they possibly can, without rationing their numbers. To fashion some connection between university departments and the unhappy fact of professional attrition is pure fantasy.

STATE SURVEY NOTE

FLORIDA

In 1969 the Florida legislature undertook an extensive reorganization of the state government, which included the reduction of about 225 state agencies to only 25. What had been for many years the Florida Geological Survey maintained its integrity as the Bureau of Geology, under a Department of Natural Resources. Robert O. Vernon, AIPG, Bureau Chief, states, "We lost no duties but our responsibilities were well defined and the language was tidied up. In essence the Bureau of Geology now has confirmed its position as the data-development agency in earth science for Florida." Offices of the Bureau are in the Larson Building, Tallahassee.

ENGINEERS AND THE DRAFT

Since its founding in 1951, the Engineering Manpower Commission (EMC) has worked closely with Selective Service and the Armed Forces in an effort to assure the effective utilization of engineers in the national interest, whether in uniform or in civilian capacities.

As an example, two draft rulings were recently made at the request of EMC. One is a clarification of what constitutes a bona fide "request" for occupational deferment under guidelines established by President Nixon on April 23, 1970. The other directs postponement of induction of engineering graduates to allow them to complete "Engineer-in-Training" examinations as the first step in state licensing procedures.

The news item from which the above was taken was sent in by D. P. Meagher, AIPG, with the observation that the engineers work hard for their boys. Maybe geologists could profit from their example.
THE PRESIDENT'S COLUMN

NATURAL RESOURCES vs. ENVIRONMENT

Is it inevitable that preservation of the environment and development of natural resources should be considered incompatible? They certainly shouldn’t be, but many people seem to be heading toward that conclusion. Apparently the unprecedented standard of living attained by Americans as a result of the development and utilization of our natural resources has given many people the leisure time to become interested in the environment; to the extent that they now wish to do away with development of natural resources entirely. I do not think that any of us are in favor of “the rape of our environment,” but unfortunately many of the present-day environmentalists have become so emotional about the subject that not only are they opposed to rape but they are against sex in any form.

I am sure that reason will dictate that we must continue to exploit our natural resources and maintain a standard of living somewhat similar to that to which we have become accustomed. Many of those who cry loudest to stop the exploitation of nature would not last two weeks if the supermarkets were closed and the electricity and water supply shut off.

On the other hand, those of us who have been involved in the extractive industries must admit that we have not been without fault in our past performance. I don’t think that any of us can be proud of what is left of some of the town-lot drilling fiascos in the oil business or some of the strip-mining operations which have been conducted in the past.

What does this have to do with AIPG? It has a great deal. Many of our members obtain their livelihood from the extractive industries, and many others are involved in environmental problems. Although both groups are geologists and members of the Institute, they are employed in what would appear to be diametrically opposed activities. There are even a few individuals, such as your president, who are involved both in environmental problems on the one hand and petroleum and mining on the other. To the outsider we must appear schizophrenic to be able to advocate the preservation of environment to one client and the exploitation of a natural resource to another.

But we must continue to utilize our resources and we must do so with as little disturbance to our environment as possible. Practical sense dictates that we cannot have all of both things; we must compromise somewhere. The compromise may come in increased costs of mineral production because of measures that must be taken to restore the exploited area to a reasonable facsimile of its original condition, or because of the actual leaving of some natural resources untouched because the value of the area in its natural state is more than that of the resources which can be produced.

Whatever the answer may be it seems that geology is involved one way or the other. There appear to be enough different types of geologists to cover all bases, and cooperation among geologists should be one of the best avenues for a solution to the problem of incompatibility between preservation of the environment and utilization of natural resources.

In the last year or two we have learned to our sorrow that any organization which is suspected of being connected with the petroleum industry is given no credence in any sort of discussion involving the environment. The same probably applies to mining. A discussion at the July meeting of the Executive Committee pointed up the fact that AIPG is the only national organization of geologists, with the exception of GSA, which is composed of geologists from all branches of the profession, from environment to exploitation. Therefore it appears that the Institute is admirably qualified by reason of the distribution of its membership to initiate a study of this problem.

It was suggested at the Executive Committee meeting that an ad-hoc committee, composed of geologists from several disciplines, which might be considered to be on all sides of the question, be appointed to attempt to formulate a program to educate not only the public but industries and governments on the compatible use of natural resources and environmental protection. By the time of publication of this issue of TPG, this committee should be functioning.

The emotional aspects of the problem will certainly be the most difficult to overcome. An example of this took place in a recent hearing for an application of Occidental Petroleum Corporation to conduct test drilling along the coast near Santa Monica, California. One of the protesters, a nearby local resident, stood up and stated that even though he was fully aware that the operation could be carried out in such a manner that he would be unable to smell it, hear it, feel it or even use it, the mere fact that he could wake up in the night and know that it was there would cause him sufficient mental anguish that he would seriously consider selling his home and moving to a different neighborhood. This man may have slightly exaggerated his feelings for the sake of emphasis, but probably not very much. Unfortunately, much of the opposition is based on just such reasoning. It is difficult to know what sort of an answer can be given in cases like this. But we must hope there are enough reasonable people left in the world that a solution can be found.

Henry H. Neel
Why have many geologists abandoned geology as a profession? What are they doing now? Did professional problems cause them to leave? Can we do something about these problems? These are some of the questions considered by the Committee on Professional Employment Standards in a recently completed survey. Following are some results, observations, and suggested solutions.

Our first task was to locate a significant number of ex-geologists. This was not easy. We did it by canvassing members of AIGP individually through the State Sections, and by contacting alumni associations. After allowances for faulty addresses, typographical errors, and so on, we obtained 1,099 valid addresses. We consider this an impressive total, though there must be many, many more.

A questionnaire was sent to 459 recipients, or a return of 42 percent. The information acquired is summarized below. Opinions expressed in commenting on these returns are those of the authors and may not represent the views of AIGP.

Age of respondents: Eighteen percent of those replying were 25 to 34 years old; 43 percent, 35 to 44; 24 percent, 45 to 59; 4 percent, 60, and 7 percent, over 65.

At age at which respondents left geological work: Fifty-seven percent were 25 to 34 years old when they left; 17 percent, 35 to 44; 7 percent, 45 to 59; 9 percent, 60; no answer.

How much experience? Sixty-four percent of respondents had less than 10 years' experience; 15 percent, 10 to 20 years; 6 percent, 20 to 30 years; and 5 percent, over 30 years. Eleven percent gave no answer.

Highest yearly earnings: Sixty-three percent earned less than $12,000; 9 percent, $12,000 to $14,999; 2 percent, $15,000 to $20,000, and 5 percent, over $20,000. No answer, 16 percent.

Geographic areas: The largest number, 30 percent, worked chiefly in the Gulf Coast region. Then followed the Pacific Coast, 14 percent; Rocky Mountains, 11 percent; Midcontinent, 9 percent; foreign, 5 percent, and eastern states, 3 percent.

Major fields: Petroleum company, 67 percent; petroleum consultant, 9 percent; mining company, 7 percent; engineering company, 6 percent; government, 5 percent, and teaching, 7 percent. The percentages incorporate multiple answers. Petroleum accounts for two-thirds of the dropouts, probably more if we had a breakdown of the no-answer group (19 percent). An appreciable number of consultants, and those in the teaching field, were fairly new.

What are they doing now? Twenty-two percent are in nongeological scientific or technical fields; 21 percent, in administration; 39 percent, in sales; 7 percent, in teaching, and 13 percent, are retired, unemployed, or gave no answer.

Among the respondents are ecclesiastics, farmers, tax collectors, lawyers, salesmen, physicians, dentists, insurance agents, real estate dealers, school teachers, and administrators, stockbrokers, bank presidents, and airline pilots.

Many used the general knowledge obtained as geologists to help them in their new fields; however, one suspects that most could have done just as well had they not wasted their time with geological licentiousness or absurd sounding titles.

Present yearly earnings: Under $12,000, 21 percent; $12,000 to $16,000, 29 percent; $16,000 to $20,000, 15 percent; over $20,000, 27 percent; no answer, 8 percent. Even with inflation, they seem to earn more now than they ever did as geologists.

Why did they leave their last employment in geology? Twenty-one percent left for personal reasons; 18 percent, because of dissatisfaction with the job; 16 percent, because of dissatisfaction with the work; 14 percent, the company went out of business; 10 percent, other reasons.

Why did they leave the profession of geology? Thirty-nine percent found better pay and opportunities for advancement in another profession. Thirty percent were unable to find geological employment after leaving their last job. Only 33 percent were dissatisfied with geological work. The question was unanswered by 84 percent of respondents.

Why did they leave the profession of geology? Thirty-nine percent found better pay, and opportunities for advancement in another profession. Thirty percent were unable to find geological employment after leaving their last job. Only 33 percent were dissatisfied with geological work. The question was unanswered by 84 percent of respondents.

Only 26 respondents took early retirements. Of these, five were retired when they were younger than 50, four between 50 and 54, seven between 55 and 59, and nine between 60 and 64. Only one person was retired over 65. Did they desire early retirement? Twenty-three did not. Half of the retirees received benefits that were under $6,000 per year. The rest were about equally divided between $6,000 to $10,000, $10,000 to $14,000, and over $14,000 per year. It is obvious that most are not in need of retirement help.

Would they return to the profession of geology if an opportunity presented itself? Almost a third (33 percent) would like to return to geology as a profession, or would try it again if they were starting over. They feel this way despite their
disappointment in geology and their success elsewhere. It is sad that so many people who left the profession had genuine feelings for geology and wish they could have done something with it. Fifty-one percent said they would not return if given the chance, and 17 percent were undecided.

What did they like about geology as a profession? There were many aspects, an important one was the inexactness of geology—it allowed them to use creative imagination. To some the work was exciting and challenging. There was a thrill when a new discovery was made. There were healthy, outdoor activities in diverse and interesting places. They liked nonrepetitive tasks. And they liked the camaraderie with others of like tastes.

What did they dislike? They disliked the least-to-fairest pay that was forced on them by management. There was low pay, a lack of opportunity, a lack of recognition of their work, and too specialized work, which became fragmented and boring. Some disliked excessive moving.

If a professional society such as AIPG, or a scientific union as has been suggested, had been available, would they have joined? Yes, 41 percent; no, 8; undecided, 44. There is a suggestion here that these geologists would have been amenable to the idea of working through a union.

Could a professional society such as AIPG have helped in problems of geological employment? Yes, 59 percent; no, 8; undecided, 32.

EX-GEOLOGISTS COMMENTS
About 40 percent of the respondents commented, some at considerable length.

A few were refreshing individualists. One told us, "Don't be overly concerned with people leaving the profession of geology. This is life. Very few people end up in the same job or profession in which they started.

Another man, "in 60's," was offered four jobs ranging from $235 to $450 per month on foreign seismic crews. So, I turned from geology and put my well-rounded education to work. It didn't take long, knocking on doors, to realize that the good money and the good life lay in the field of sales. Selling what? Anything! If a product has an application, a geological engineer will find it." Still another successful salesman (he called himself a marketer) told us, "Schools should make it clear to students that geology is no holy order that deserves more consideration than any other profession— they must prepare themselves to grow beyond the confines of the profession."

There were others who grew out of geology but for whom geology was a necessary step. An example was a park ranger who wrote, "I really haven't left the field totally. Working in Yosemite National Park, I find opportunities to consider geologic problems." The same may be said of certain college administrators, of bankers who deal with oil properties, and some others.

Unfortunately, for most people, leaving geology was more of a complete break, and for many of them it was accompanied by circumstances that they regard as less than just. One person, who described himself as too old to find a geological job at 43, wrote, "Shortly after 20 years' service with a major oil company, I was summoned to the office and told there were just 'too many people' employed in Denver. I was not 'fired,' but it was made plain that I should quit. Later I learned that the story about 'too many people' was a bold-faced lie. At the very moment these words were being uttered, company talent scouts were interviewing and hiring college students.

Others wrote along similar lines. "Big companies, as a rule, close the door to anyone over 30 unless lured from another company." "The geological profession should be most careful about encouraging people to enter a profession that has such a turbulent and clouded future." "Petroleum companies tend to dump experienced personnel when economic conditions become the least bit sticky." "After almost 11 years, I was told I was undesirable and no longer an asset to the company. Yet, not too long previous to that I had been promoted and given a raise and increase by the same people."

These feelings extend to those few people who made it to retirement, only it was early retirement. One who was retired at age 56 with annual benefits of $3,250 wrote, "My company has a retirement plan set up for age 65. Most of us were called in and told that early retirement was mandatory. Besides getting only a fraction of the retirement benefits that we had expected, we were at an age at which it is possible to continue our line of work with a company, simply because they won't hire older men. The company is still recruiting younger men."

Universities also came in for criticism. A successful company vice-president observed, "The universities are to blame insofar as the professional geologist is concerned. A much broader curriculum is needed for the future professional. A Ph.D. is no substitute for elementary business courses. Many bright young geologists are unable to dictate a simple business letter or a clear concise geological report."

"Colleges and universities have acted with flagrant irresponsibility regarding the production of geology graduates."

"They should not hand the new graduate his sheepskin and leave him to grope in the dark. Give him strong consultative advice and guidance."

WHAT COULD AIPG DO TO HELP?
Some of the abuses are there because the schools have steadily produced an oversupply of geologists. However, geology departments cannot be expected to judge the balance of supply and demand. They are individually too isolated. This is an area in which AIPG can offer guidance.

A new type of employment forecast is needed, one that does not allow for the destruction of working professionals. AIPG could undertake to make objective forecasts of total people working, anticipated reduction by retirement at age 65, growth or retrenchment trends in the total industry work effort, and estimated needs for geological graduates for the maintenance of stable conditions— that is, avoidance of either an oversupply or an undersupply of geologists.

Once such forecasts are made, the numbers of new graduates that are needed could be determined on a rational basis. These figures could then be proportioned to the individual states.
on the basis of their statewide employment of geologists and on the basis of their schools for the training of geologists. Then these schools could be given guidelines that would show the numbers of geological graduates each ought to produce in future years. Members of the State Sections of the AIPG could hold seminars for faculty members and for students to explain these guidelines and to discuss the problems that accrue to the profession when they are violated.

Another consideration is the threat to the companies of professional unionism. We detected sentiments that favored this direction. Though we said nothing about recommending a union, one correspondent asked us, "Are you suggesting a union or Society for Prevention of Cruelty to Experienced Geologists? If so, I'm for it 100%." Another told us, "Read Samuel Clemens on the Mississippi Pilots Union." We did so. We discovered it is Chapter XV in LIFE ON THE MISSISSIPPI and is entitled The Pilot's Monopoly. You should read it, too.

Very likely, not all companies are equally abusive. AIPG could make studies that would point out which companies are flagrantly unfair in their dealings with personnel. These cases could be publicized. There is the possibility that moral persuasion and publicity could temper some practices.

Stronger and more specific measures could be taken to restrict the practice of firing mature professionals in order to make room for fresh graduates. A Federal law forbids age discrimination in hiring. Mandatory early retirements and outright firing in order to replace older people with younger ones may be a violation of the intent of this law. AIPG could investigate the legalities involved and institute test cases. If this law is not enough, then the Institute could devise and promote stronger legislation.

**RECENT DEATHS**

THORNTON DAVIS, AIPG, died in San Antonio on December 7, 1969, at the age of 77. He was a charter member of AIPG.

W. E. BIVENS, AIPG, independent operator of San Angelo, died in that city on March 23, 1970. He was 52 years old.

**DUTIES MANUAL ISSUED**

The long-awaited guide to the basic duties and responsibilities of AIPG’s National and State Section officers, and of its appointed committee chairmen at both levels, is at length off the press and in the hands of the appropriate officials.

Six pages are devoted to the duties and responsibilities of the National officers; two to Advisory Board delegates; four to State Section officers, and one to chairmen of standing committees. In addition, the manual contains the 10-page statement of "Policies and Procedures for Screening Boards" (see TPG, Dec. 1969), and a 14-page handbook for members of the Membership Committee.

Because it is realized that this first edition is subject to periodic revision, the manual is in loose-leaf form. Thus changes can be made on individual pages without the necessity of reprinting the entire booklet.

Executive Director Brunton asks the assistance of all who have occasion to use the manual in correcting and improving the content, to help assure effective operations and a smooth transition from one administration to its successor.

**LETTERS TO THE EDITOR**

Sir:

As a charter member of the American Institute of Professional Geologists I am quite concerned over the turn of events with regard to the widening of the gap between the AAPG Division of Professional Affairs and the AIPG. It seems that we are both working towards the same goal but going on diverse routes and diluting our overall effort. Naturally being prejudiced I feel that the AIPG could better serve the needs of all geologists, not just petroleum geologists, in our desire to increase our professional status, upgrade "the profession," and have a larger voice in domestic and world affairs which are affecting our environment and economy today and will in the future.

I know that quite a number of our membership in AIPG are also Certified Petroleum Geologists with the AAPG.

In these times of economic strain I see no reason to have two organizations working towards the same end. I know there have been many esteemed individuals who have previously given this considerable thought and effort towards reconciling the schism which has developed in the ranks of geologists who are concerned about their role related to professional standards. However, I am willing to offer my services in any way that may be utilized to effect a union between the above two organizations. I believe we should have one organization of professional geologists in all lines of geology. I believe that everybody can be served better thereby.

I approve of the effort to have a session on professional affairs at annual meetings of the AAPG.

August 18, 1970

Benjamin F. Hoffacker, Jr., AIPG

Sir:

Just one of the results we will get from having various levels of membership is that a new applicant having all the qualifications for the highest level will actually be more professional than a member with a lower-level rating. In other words, there will be geologists outside AIPG who are better qualified professionally than members of AIPG. (Do we want to belong to a second-class outfit?)

While AIPG was based on bringing together geologists who had proved themselves on the "battlefield" of applying their geological understanding --- or let's say by letting their accomplishments speak louder than their certificates --- we now find a tendency to lengthen the time in the scholastic realm and shorten the time in the accomplishment realm. There is no doubt about it, we are speaking of going in opposite directions at the same time. Is our objective to lower the average age of our members, or to become associated with true professionals in our field?

A group calling itself professional and having within us membership two or more levels, any of which are not fully professional and not readily distinguishable by the public from the level of true professionals, is liable to a suit based on fraud. A suit of this type would probably include the officers of the organization. If successful, it would mean a sudden end for AIPG.
Bearing all the above in mind, I still recognize a need for an identifiable contact between AIPG and the less experienced geologists and the students. May I offer a solution that will protect the public from confusion and at the same time establish such a contact. Before becoming a Certified Professional Geologist one must be an Applicant. Our dilemma can be solved by making all subvisions within this group of applicants, as an applicant is clearly distinguishable from a member.

One who meets the high requirements of AIPG and applies for membership is naturally an "AIPG Applicant," and should be thus identified. One who has graduated from an accredited university or college and is in the process of accumulating his years of experience can be an "AIPG Pre-Applicant." One who is still working toward a degree in geology can be an "AIPG Student Applicant."

Let us not forfeit our best chance to be identified as the elite group of the geological profession by moving closer to the other groups of geologists that have rejected for their associations the full range of activity necessary for professionals in the United States today. Let's rot reject the high standards that have given our group its strength. Think a moment and you will clearly see that the only strength we have comes from the principles we apply.

Our present dues are excessive if we are going to be just another talking group of geologists indistinguishable in standards, goals, and accomplishments from those associations already established. For a truly elite group of professional geologists I am willing to pay dues and contribute time in the amount it takes the present membership to get the job done. The less the standards, goals, and accomplishments, the less dues I am willing to pay and the less time I am willing to contribute.

August 24, 1970

Leroy Garlin, AIPG

Sir:

I understand that pressure is mounting for a second class of membership in the Institute and/or a lowering of the requirements for admission. I feel constrained to express my opposition to either of these changes.

The reasons given for these contemplated changes are to increase the membership, and to generate interest in AIPG among young geologists. An obvious, though seldom expressed, corollary to the first of these is that the Institute can have a larger budget. There is no question of the desirability of these goals.

There is a question, however, of the fundamental thrust of the Institute. Nonmembers may thoughtfully ask whether AIPG is principally concerned with stating and maintaining high standards of professional and ethical performance, geologic education, political activity, and community responsiveness; or with representing a large proportion of working geologists. The AAPG is, of course, more qualified in the latter field.

Membership requirements in AIPG call for twelve years of experience, which may include four years of undergraduate training and up to four years of graduate training. If an applicant began college at age eighteen, earned a Master's degree, and worked six years, he would have fulfilled the experience requirement for membership at age thirty. Considering the variety of nature's geologic situations, the practice required to use geologic tools effectively, and the overall experience necessary to develop what some of us would call "good judgment," I seriously question whether most geologists have become PROFESSIONALS before they are thirty years old. Would you entrust a substantial investment to a younger person if you were a client?

The "great depression" in geological employment began in 1968. By 1962 there were hardly any young people preparing themselves to become professional geologists. The number of students in geological departments has only begun to increase in the past two years. So our profession will, henceforth, bear a six- to eight-year "scar" of no new blood. The "scar" will be manifest in membership in all the geological organizations, just as it is woefully apparent in many companies now. I think this accounts, to some extent, for the paucity of younger geologists seeking admission to AIPG, and the effect will be with us for years to come.

In spite of these factors which inhibit young applicants, I am opposed to lowering the membership requirements, and to the introduction of a subordinate class of membership. What alternatives to a stagnant membership do we have then?

We can each, individually, get off our complacent duffs and actively seek out those younger geologists who are qualified for membership in the Institute. There are more of them than you may suspect. We can enlist men in their thirties who are becoming senior geologists and district managers in our companies. We can draw the best of the state and federal survey people. We should approach the younger consultant; he has a longer time to be concerned about his profession.

Nonmember practitioners will be prompted to join us for two reasons: their high regard for the Institute, and their being asked to join by respected members. An active local group, engaged in worthwhile projects, with good publicity in both professional and public media, is the best way to engender esteem for the Institute among nonmembers.

As for the good young geologists, let's ask them to help with AIPG-sponsored projects even if they are ineligible for membership because of age. They will appreciate the notice, and will become acquainted with AIPG goals through association while they help make our worthwhile programs go. Don't forget to invite them to the monthly luncheon meeting.

In summary, AIPG is faced with the prospect of a stagnant membership for some years to come, and easier requirements for admission and/or a second class of membership have been suggested as remedies. I urge the Institute to reject these changes and to continue the thrust toward high standards of professional performance and political and community activity. Outstanding nonmember geologists who are qualified for membership should be actively encouraged to learn about the Institute and to join us. Public acceptance and membership will come as we make PROFESSIONAL a capital word.

August 25, 1970

Ralph H. Espanch, AIPG
GEOLOGY IN THE PECKING ORDER
(Reprinted with permission from the Newsletter of the Council on Education in the Geological Sciences, Murray Felsher, Editor)

There is something that is widely accepted in Academe but rarely discussed. It is called the Scientist’s Pecking Order. It is a list of the basic sciences, in a sequence purportedly showing descending difficulty to master, importance to society, and worth to the individual. The list usually reads: (a) Mathematics, (b) Physics, (c) Chemistry, (d) Biology, (e) Geology. Now: (1) In order to be considered well versed in his own field of science it is sufficient that a man be competent in that field, but it is not necessary that he be competent in any field below his own. Thus a competent mathematician, at the top of the list, can advance professionally without ever stopping (stopping?) to learn much about, say, chemistry. Likewise, a biologist can, with reasonable success, teach his courses, attend his meetings, publish his papers, and receive the usual academic and professional recognition, all without ever having taken a single course in geology.

Now consider the following. (2) In order to be considered well versed in his own field of science it is necessary that a man be competent in that field and in any field above his own. Thus a physicists (if he is destined to advance, as they say, the Field of Knowledge) must be familiar with mathematical technique and theory. Note, he need know very little chemistry, biology, or geology. Likewise, a mathematician may dwell in the upper reaches of Hilbert space, continue his professional growth and development, and never know the difference between phases, phenol, phages, or phyla. From (1), then, to be a good mathematician one need know very little of the other sciences. And thus rests the basis for the Pecking Order, and the strength of mathematics therein. However, (3) note that one’s breadth of professional competence increases down the Pecking Order. This follows from (2). A well–trained geologist, then, is the one scientist best prepared for leadership in solving the broadest problems—the multi-disciplined, inter-disciplined areas of current concern. The over-all scientific problems of ecology, of the environment, of space, of the oceans are best understood by a good geologist. Yes, a geologist must become familiar with all the sciences to become competent in his own field. And this, historically, has been the major weakness in our training and our education. Let us recognize it as such. An undergraduate program in the sciences that prepares a major enclosed in a professional vacuum may successfully produce a competent mathematician. It will not produce a competent geologist.

PROFESSIONAL PARAGRAPHS

ERNEST H. BOSWELL, AIPG, hydrologist with the USGS, was made an honorary member of the Mississippi Gem and Mineral Society at its June meeting. The award was made in appreciation of his help in securing exhibits, offering information, and giving talks whenever called.

PHILIP E. LAMOREAUX, AIPG, is president-elect of the Association of American State Geologists. He was elected at the annual meeting of the AASG in Rolla, Missouri.

SHERMAN A. WENGERD, AIPG, president-elect of the AAFP, recently returned from an extended trip to Alaska, where he visited the North Slope, Cook Inlet, and Kenai Peninsula.

LEE W. KILGORE, AIPG, is a member of the citizens’ committee to advise the Farmington (N.M.) school board on geological matters connected with construction of a large new fine-arts facility for the Farmington High School.

JON L. RAU, AIPG, has left Kent State University to join the Department of Geology at the University of British Columbia, Vancouver, Canada.

DEAN A. Mcgee, AIPG, head of Kerr-McGee Corporation, has been elected to the Board of Trustees of California Institute of Technology.

SAMUEL P. ELLISON, JR., AIPG, professor in the University of Texas at Austin, was appointed acting dean of the College of Arts and Sciences on August 1, 1970.