SECOND ANNUAL MEETING SET

General Chairman Jay G. Marks (CPG 48) has announced that the Second Annual Meeting of the Institute will be held on October 8 and 9, 1965, at the Brown Palace Hotel in Denver. Please plan accordingly.

OKLAHOMA CPGS FORM SECTION

The AIPG members of Oklahoma met at Oklahoma City on February 27, 1965, adopted a constitution and bylaws, subject to AIPG approval, and elected section officers. Executive Secretary Arthur F. Brunton attended the meeting.

Officers of the section are:
- President: Bob Hancock (CPG 44)
- 1st Vice-Pres.: Jerry Newby (CPG 249)
- 2nd Vice Pres.: Arnold Buzzalini (CPG 725)
- Sec.-Treas.: David P. Meagher (CPG 456)

Bing Q. Yee (CPG 569), Jerome Westheimer (CPG 730) and Robert M. Becker (CPG 41) were elected district representatives, and Lon B. Turk (CPG 277) was named Section Delegate to the Advisory Board of AIPG.

The Oklahoma Section is planning an active expansion program and undoubtedly will shortly become one of the more important sections in AIPG.

DR. O. R. GRAWE DIES AT ROLLA

Dr. Oliver Rudolph Grawe (CPG 548), professor of geology at the University of Missouri, died on March 22, 1965, at the age of 63, following a heart attack. Interment was in the family lot in Valhalla Cemetery in Saint Louis, Missouri.

Dr. Grawe, a member of the faculty of the Missouri School of Mines - University of Missouri at Rolla since 1928, was one of the best-known and best-liked campus personalities at his institution. He was admired by both his students and his colleagues as a painstaking teacher and a meticulous scientist.

Dr. Grawe -- "Ollie" to his many friends -- received his bachelor's and master's degrees from Washington University at Saint Louis in 1922 and 1924, and his Ph.D. from the University of Iowa in 1927. As a student, he qualified for Phi Beta Kappa, Sigma Xi and Sigma Gamma Epsilon; in professional life he was outstanding as a mineralogist, an economic geologist, and an administrator.

Dr. Grawe is survived by his wife, Mrs. Sally Grawe, one son, Oliver R. Grawe, and his mother, Mrs. Charlotte Grawe of Saint Louis.

IOWA SECTION ORGANIZED

On March 6, 1965, an organizational meeting of the Iowa Section of AIPG was held at Iowa City, and petitioned the approval of its constitution and bylaws by the Executive Committee of AIPG. The Iowa Section was authorized by unanimous vote of the Executive Committee at Denver on March 12, 1965.

An unusual feature of the Iowa Section is that it includes geologists from adjoining areas of Nebraska, under the "contiguous state" provision of the bylaws.

Unofficial figures show that if the rest of the geological population were as efficiently organized in percentage of AIPG participation as in Iowa, under the leadership of national Vice-President A. C. Tester (CPG 2), AIPG nationwide would now have over 9000 members, and the Texas Section alone would have some 2000 CPGs. Perhaps Dr. Tester should be sent on an evangelical tour into the benighted areas.

TEXAS ENGINEERING BILL AMENDED

After a bad scare, Texas geologists are feeling somewhat relieved following latest state legislative action on the Texas Engineering Practices Bill, concurrently introduced as House Bill 123 and Senate Bill 74.

The original legislation has now been modified into relatively acceptable form, but for several weeks the outcome was in considerable doubt, and enough mistakes were made by geologists seeking to amend or defeat the bill to serve as a valuable object lesson for future guidance on legislative problems, not only in Texas, but in any other state.

AIPG was alerted to the implications of this legislation, sponsored by the Texas Society of Professional Engineers, through the vigilance of two Austin geologists, Harold D. Holloway and Dr. Peter T. Flawn (CPG 430), who notified Texas (continued on page 5)
THE PROFESSIONAL GEOLOGIST
Newsletter of the American Institute of Professional Geologists
P. O. Box 836 Golden, Colorado 80402
Volume II - Number 3 - May, 1965

OFFICERS
President ........... Martin Van Couvering, Pasadena, Calif.
Vice-President ......... Allen C. Tester, Iowa City, Iowa
Secretary-Treasurer ...... Thomas R. Beveridge, Rolla, Mo.
Editor .................. Frank B. Conselman, Abilene, Texas
Chairman, Advisory Board ... Ben H. Parker, Denver, Colo.
Executive Committeeman ... Fred N. Earll, Butte, Mont.
Executive Committeeman ... Adolph Honkala, Richmond, Va.
Executive Committeeman ... William A. Newton, Denver, Colo.
Executive Committeeman ... Howard E. Rothrock, Coleman, Texas
Executive Secretary .......... Arthur F. Brunton, Golden, Colo.
The Professional Geologist is published bi-monthly by the American Institute of Professional Geologists.
Copyright 1965 American Institute of Professional Geologists. All rights reserved.

Material intended for the Editor may be addressed to him directly at 514 Petroleum Building, Abilene, Texas.

EDITORIAL

The AIPG charter membership period is now closed, and the official total count of approved charter CPGs stands at 743. New applications have, of course, been continuing to arrive in impressive numbers during the current year, but these are the 743 professional geologists whose applications were received prior to January 1 and who were approved prior to March 1, 1965.

Our hard-working Executive Secretary, Arthur F. Brunton, has compiled a statistical analysis of these 743 pioneers, and the results are interesting, significant and, on the whole, gratifying. We think you will be interested now in looking about at your associates.

First, concerning type of employment, Mr. Brunton finds that 13.73% of our charter members are in academic fields; 42.93% are in corporate employment; 28.94% are consultants or self-employed "independents," and 14.4% are in governmental employment. You will note that Arthur's figures add up neatly to 100%, which shows that no one has been overlooked, and is a further indication of the efficiency of the Golden office.

Of the government employees, 7.0% of the 743 are federal and 7.13% are state, an excellent balance. We also have 2 municipally employed geologists, who add another 0.27% to the non-federal majority. This should be reassuring to those fearing federal domination of our society.

The 71.87% of the charter membership employed by corporations or serving as consultants is heavily dominated by the petroleum industry. 81.2% of company employees and 86.4% of the self-employed are concerned with oil and gas. In fact, oil geologists of both categories make up 59.9% of the entire charter roster. Industrial geologists are next most numerous in the economic categories, with 8.8% of the company men and 8.9% of the independents. Mining geologists comprise about 10% of the company-employed but only 4.66% of the self-employed.

Executive Secretary Brunton has also examined our academic credentials. The charter list includes 24.36% with Ph. D.'s, 30.15% with magisterial and 44.82% with baccalaureate degrees. Five geologists of the 743 (0.67%) were considered sufficiently outstanding to qualify without an academic degree.

The list includes many prominent geologists, serving in both executive and scientific capacities, as President Van Couvering has pointed out. In addition to an imposing battery of company executives, exploration managers, chief geologists, etc., we have 31 chairman, 12 state geologists. The list contains college presidents, deans, emeriti, and retired economic geologists of legendary distinction. We probably include several millionaires, and at least one pauper. We may also have inhaled one or two mistakes in the course of our formative procedures.

The charter list is, of course, only a beginning. The numbers will grow; the quality, however, will be hard to surpass. There is certainly significance in the large proportion of petroleum geologists, but it would be a grave mistake to consider this indicative of either a dedication or an orientation of AIPG in that direction. In future years these internal proportions will undoubtedly change; in the meantime we hope to keep The Professional Geologist representative of all phases of our multifaceted profession, and sensitive to any influences that may properly be included in the scope of professional geology.

In our charter period we have succeeded in raising our banner, and we have let it be known that AIPG is in the field. Several hundred additional applications are presently in the mill. If our future members are as good a cross-section of our profession as is our charter contingent, AIPG will undoubtedly assume the institutional status to which it aspires.

MINUTE MAPPING OF THE MOON

Using the last photo transmitted by Ranger VII before impact on the moon, USGS astrogologists at Flagstaff, Arizona have prepared a detailed lunar topographic map of a small portion of the Mare Cognitum.

The photo was taken from a height of only 1,000 feet, 0.176 seconds before impact. From this the Survey has mapped an area 95 x 80 feet with a contour interval of four inches. This is somewhat more detail than the USGS has yet employed in mapping one or two terrestrial areas that come to mind.
This time, my main subject will be the applications for membership in AIPG. There is much to be said about them. From time to time, objections are raised to the requirement for sponsor and reference letters. While such cases are a small minority of the total number of applications, I believe it is worthwhile to dwell on the subject briefly.

It is clear that some of the objection arises from embarrassment on the part of the applicant at asking his friends to sponsor him. This is a misguided notion, for we find that most sponsors are glad to act in that capacity. The obvious exceptions are those where the request is made of someone who is reluctant to sponsor the applicant as a matter of principle. In a few cases I have been obliged to tell the applicant that, despite my long and friendly acquaintance with him, I simply do not know enough about his work, and asked him to find a substitute sponsor which, in each case, he has been able to do. Two such applicants have written to commend me for my action. But such cases are very infrequent.

A very few applicants seem to have felt that the request for sponsorship letters was an adverse reflection on them. Of course the obvious answer is that we have to treat all applicants alike in this matter, to avoid a charge of favoritism. Nearly all applicants have seen the necessity of this step and have provided the necessary letters without complaint. This goes for many of the top geologists in the country.

To those of us who have been engaged in screening applications, the usefulness of the letters, indeed the absolute necessity of them, is obvious. I feel safe in saying that not one of us would for a moment consider abandoning the practice.

The objection has been raised that an applicant naturally would seek endorsement only from those whom he felt would be favorable. There is little doubt about that; but, if a geologist is able to get letters of endorsement from five competent and respected geologists, the likelihood of his being in the same category is very considerable. If they are his friends, as they usually are, that is all the more recommendation.

As might be expected, the letters vary from the flambouyant to the terse, depending upon the author's temperament. Not a great deal of experience with these letters is required to enable the reviewer to evaluate the letters themselves. Quite a satisfactory picture emerges. To some degree, different sponsors are impressed with different qualities in the applicant. Also a good deal of "reading between the lines" is possible. The degree of enthusiasm of the sponsors is an important factor.

In short, we find our screening process a necessary function, that is quite burdensome but also very rewarding. To me, watching the parade of personalities and personal histories has been an exciting experience, and has made me happy and proud to find myself in such company. I refer not only to those who have outstanding reputations, but also to the "rank and file." There is much to be admired all along the line.

One of the most gratifying things is the enthusiasm for both AIPG and the geological profession that pervades so many of the letters. As long as this feeling exists, AIPG cannot fail in its mission. Many have expressed the position that this is just what they have been waiting for. After seeing the kind of men who have joined our cause, it is plain that we have an ample supply of dedication, experience and energy to carry on our work indefinitely. Strong feeling about ethics and professional practices is expressed again and again.

As of this writing, it has been my privilege to process approximately a thousand applications for AIPG membership. The experience has been a liberal education for me. It has given me an insight, into the practices of geology and the character of geologists, that I could not have acquired in any other way.

One of the interesting sidelights is the large number of geologists who are engaged in church work. This effectively disposes of the conflict between science and religion that has so often been mentioned.

A very large number have also engaged in various kinds of civic activities, including Boy Scout work, science fairs, educating the public on geology, political activity and such special functions as studying the effect of the Alaska earthquake, where the geological investigation was largely in the hands of AIPG members.

One effect, on me, of this screening process is that it has developed a wish to know, personally, each of the applicants. I am sure that I would find many of them very congenial, and that they would make valuable friends. This is true of the large number that I already know.

Many of our members have been honored - by their schools, by their societies and in other ways. Some have written books that are widely used. Many have written articles for technical publications. We try to call attention to current ones in The Professional Geologist.

It has occurred to a number of us that there would be great advantage in having our membership classified by categories, and this is something we hope to do ultimately, but for which we are not ready. It is a big undertaking. One of the problems is that, in many cases, there is no sharp definition between categories. However, I believe the demand for this kind of information will impel us to try to satisfy that demand. Besides the wide diversity of occupations among geologists, there is also the problem of their wide dispersion geographically, and their frequent changes of location.

The applications form such a vital part of the AIPG organism that I thought it desirable to dwell upon them at some length.

Mail is still reaching me that indicates confusion in the minds of some prospective applicants about the matter of sponsorship. The writers are not sure whether they may still use sponsors who are not members of AIPG. We inform these people that, by action of the Executive Committee, non-AIPG sponsors who belong to a qualified society may still be used until our next Annual Meeting, October 8 and 9, 1965. Because of the existing uncertainty, this seems a good place to restate that fact.

Martin Van Couvering
USGS HUNTS WARM OBJECTS ON VIRGIN ISLANDS

The USGS is employing aerial infrared sensing in the Virgin Islands in an attempt to locate areas where fresh waters are being lost to the sea.

As explained by hydrologist J. T. Callahan, the infrared camera responds to heat rather than light. An infrared image on film shows temperature differences in tone — a lighter tone for warm objects, and darker tone for cold ones. Submarine springs, discharging relatively warm waters into the sea, show as light patches or streaks.

This technique is reported to have been successfully used recently in the Hawaiian Islands, long noted for their warm objects, such as volcanoes, etc.

THE INDUSTRIAL GEOLOGIST

ALLEN C. TESTER (CPG 2)

The membership of the Institute is composed of individuals who are trained and experienced in the science of geology and who utilize its many specialties, and by different procedures, and for many different types of employers, and includes many teachers and the self-employed geologists. This is a pride and joy of the Institute. When this fact was emphasized at the Annual Meeting in Denver November 13, and several categories were named, one was called the "Industrial Geologist." Questions have been asked as to the meaning of this term.

An industrial geologist is one whose efforts are utilized by entrepreneurs for any purpose, in any place, in any manner, by which the science of geology can contribute to the successful functioning of the enterprise.

Geology has long been divided into the basic units of physical and historical, with many interrelated parts, such as, physiography, petrology, stratigraphy, paleontology, structure and metamorphism. As the science developed and the use of geologists increased the standard parts have been splintered and many highly specialized areas of teaching, research, and application have gained prominence.

Abraham Werner was a convincing teacher of several erroneous theories at Freiburg Mining Academy in Saxony between 1775 and 1815 but his thorough work on the copper deposits as mined in the Harz Mountains area was a very early, if not the first, economic application of geology. For many years geologists concentrated their studies on ore deposits and because an ore was defined as a metal or previous substance that could be extracted with an economic profit, the term economic geology was evolved. Later, in 1904, Chamberlin and Salisbury defined economic geology as "concerned with the industrial applications of geologic knowledge," and mining geology as a sub-section of economic geology. Other divisions have been made, such as petroleum geology, hydrogeology, engineering geology, and military geology. All are economic geology with an adaptation to a particular natural resource, or for a particular purpose, or for an employer of specific interests, and commonly practiced by individuals to the exclusion of the other specialties.

Industrial geology is not a new variety but instead is more nearly the total of economic geology as defined by Chamberlin and Salisbury and as practiced by the general consultant fifty years ago. The part that is new is the large number and variety of industries and clients that utilize the economic geologist, either on a full-time or consulting basis.

The industrial geologist must be thoroughly and broadly trained and experienced to do competent work in many types of applied geology. He may be concerned with exploration for rock materials or minerals of certain types one day, with a ground water problem another day, with foundation footings or excavation problems at another time, and so on. He must recognize the need for a specialist when his problems become so complex and detailed that his experience does not qualify him to serve his employer to the greatest possible advantage.

The increased use by industry of many rare elements from unusual minerals has emphasized the need for geologists to locate favorable sources of such material. The brick, tile, cement, and ceramic manufacturers are all learning the value of geology as are the builders of water aqueducts, highways, airports, and railroad relocation projects. Practically all major class I railroads employ geologists to develop natural resources on their own property or to find the necessary water, minerals or other natural raw materials to induce industry to build plants in the areas served by their lines. A major western railroad in cooperation with a large electric utility company and state geological surveys has conducted for several years an elaborate mineral survey in several western states.

Other examples of the use of geologists by industry are known to most geologists and the list would be long. Many banking and financing institutions employ geologists to review the geological and economic aspects of their client's and customer's propositions. Several branches of government have geologists on their staff. Only recently a personnel interviewer called on the writer for recommendations for geologists on the Ph.D. level for employment by the Central Intelligence Agency.

The term "Industrial Geologist" is in part a reincarnation of the term "Economic Geologist." This is justified by the fact that economic geology has been split into so many specialties that we need to define a geologist who does not fit any of the commonly recognized categories but who serves industry just as ably as does a petroleum geologist or a mining geologist in his special application of economic geology.

---

Industrial geology is not a new variety but instead is more nearly the total of economic geology as defined by Chamberlin and Salisbury and as practiced by the general consultant fifty years ago. The part that is new is the large number and variety of industries and clients that utilize the economic geologist, either on a full-time or consulting basis.

The industrial geologist must be thoroughly and broadly trained and experienced to do competent work in many types of applied geology. He may be concerned with exploration for rock materials or minerals of certain types one day, with a ground water problem another day, with foundation footings or excavation problems at another time, and so on. He must recognize the need for a specialist when his problems become so complex and detailed that his experience does not qualify him to serve his employer to the greatest possible advantage.

The increased use by industry of many rare elements from unusual minerals has emphasized the need for geologists to locate favorable sources of such material. The brick, tile, cement, and ceramic manufacturers are all learning the value of geology as are the builders of water aqueducts, highways, airports, and railroad relocation projects. Practically all major class I railroads employ geologists to develop natural resources on their own property or to find the necessary water, minerals or other natural raw materials to induce industry to build plants in the areas served by their lines. A major western railroad in cooperation with a large electric utility company and state geological surveys has conducted for several years an elaborate mineral survey in several western states.

Other examples of the use of geologists by industry are known to most geologists and the list would be long. Many banking and financing institutions employ geologists to review the geological and economic aspects of their client's and customer's propositions. Several branches of government have geologists on their staff. Only recently a personnel interviewer called on the writer for recommendations for geologists on the Ph.D. level for employment by the Central Intelligence Agency.

The term "Industrial Geologist" is in part a reincarnation of the term "Economic Geologist." This is justified by the fact that economic geology has been split into so many specialties that we need to define a geologist who does not fit any of the commonly recognized categories but who serves industry just as ably as does a petroleum geologist or a mining geologist in his special application of economic geology.

---

Industrial geology is not a new variety but instead is more nearly the total of economic geology as defined by Chamberlin and Salisbury and as practiced by the general consultant fifty years ago. The part that is new is the large number and variety of industries and clients that utilize the economic geologist, either on a full-time or consulting basis.

The industrial geologist must be thoroughly and broadly trained and experienced to do competent work in many types of applied geology. He may be concerned with exploration for rock materials or minerals of certain types one day, with a ground water problem another day, with foundation footings or excavation problems at another time, and so on. He must recognize the need for a specialist when his problems become so complex and detailed that his experience does not qualify him to serve his employer to the greatest possible advantage.

The increased use by industry of many rare elements from unusual minerals has emphasized the need for geologists to locate favorable sources of such material. The brick, tile, cement, and ceramic manufacturers are all learning the value of geology as are the builders of water aqueducts, highways, airports, and railroad relocation projects. Practically all major class I railroads employ geologists to develop natural resources on their own property or to find the necessary water, minerals or other natural raw materials to induce industry to build plants in the areas served by their lines. A major western railroad in cooperation with a large electric utility company and state geological surveys has conducted for several years an elaborate mineral survey in several western states.

Other examples of the use of geologists by industry are known to most geologists and the list would be long. Many banking and financing institutions employ geologists to review the geological and economic aspects of their client's and customer's propositions. Several branches of government have geologists on their staff. Only recently a personnel interviewer called on the writer for recommendations for geologists on the Ph.D. level for employment by the Central Intelligence Agency.

The term "Industrial Geologist" is in part a reincarnation of the term "Economic Geologist." This is justified by the fact that economic geology has been split into so many specialties that we need to define a geologist who does not fit any of the commonly recognized categories but who serves industry just as ably as does a petroleum geologist or a mining geologist in his special application of economic geology.
TEXAS ENGINEERING BILL AMENDED (continued)

Section President Halbouty and Editor Conselman on February 10 that an apparently innocuous pair of identical bills designed to "protect" the engineer potentially might eliminate the geologist. A check on the wording of this proposal showed that it was indeed capable of interpretation reserving all applied sciences to registered engineers.

Because of the advanced status of this legislation, emergency mobilization to combat it was required, for which Texas CPGs found themselves not yet prepared. Nevertheless, they made up in vigor and volume what they lacked in coordination and finesse. Telephone calls flew back and forth all over the state and to President Van Couvering. On February 16 Conselman wrote to Chairman Cory of the House State Affairs Committee proposing an amendment to HB 128, and on February 17 Halbouty wrote to the same official proposing a different amendment. Meanwhile Messrs. Holloway and Flawn were effectively mobilizing sources available to them, serving as observers, and reporting committee settings for hearings. President Halbouty appeared before the Board of Directors of SPE of AIME at their Chicago meeting and elicited letters urging caution, addressed to both Senate and House Committees. Support for AIGP objections was obtained from a number of geological societies, a geophysical society, various influential individual geologists, including Dr. O. T. Hayward at Baylor, utilities companies (complete with "legislative representatives"), an oil and gas association, a labor union, an industrial trades council, and others. When hearings were called the engineers sponsoring the bill, who had previously shown little inclination to compromise, complained bitterly that we had "too many people down there."

On February 23 geologists representing AIGP, the Texas Section of AIGP, the Abilene, Corpus Christi, Ft. Worth, Houston, South Texas and San Angelo Geological Societies, and the Houston Geophysical Society testified at Austin before the Senate Jurisprudence Committee, following an informal conference with the chairman of the House Committee on State Affairs. As a consequence, AIGP and other geological representatives met with the professional engineers and their attorneys to agree upon amendatory wording. The tentative agreement reached, however, was later abandoned by the engineer sponsors.

On February 24 A. Wayne Wood (CPG 189) and John S. Rives (CPG 120) appeared before a night-time meeting of the House State Affairs Committee and voiced the profession's objections to the bill. Newspaper and report coverage was obtained, and by this time a fairly heavy barrage of letters, telephone calls and personal conversations was being delivered on members of the legislative committees from all points, but this fire, like preceding efforts, suffered somewhat from lack of coordination.

There finally emerged an amendment reading as follows, which was adopted by the Senate Committee and approved by the Senate, with some premature geological rejoicing, before objection could be made to the last clause:

"The following persons shall be exempt from the provisions of this Act, provided that such persons are not represented or held out to the public as duly licensed and registered by the Board to engage in the practice of engineering.

... (i) Qualified scientists engaged in scientific research and investigation of the physical and natural sciences, including the usual work and activities of meteorologists, seismologists, geologists, chemists, geochemists, physicists and geophysicists, provided that such work does not include responsibility for engineering designs, plans, specifications and supervision."

Under the "provided" language, it was realized that in context with other terminology, a physicist could not design a geophysical instrument, nor a geologist specify the casing program for a well, nor supervise the drilling of sensitive zones, nor control a coring program, nor stake a location. A last-minute effort was therefore made to keep the "provided" phrase out of the House amendment, and this succeeded by dint of personal appeals to specific legislators. Furthermore, the House amendment prevailed in conference with the Senate, and the re-amended bill, with the language now in acceptable form, was passed on April 1 and sent to the governor for signature. The net effect is definitely favorable, since the present act eliminates any possibility of misapplying earlier engineering registration statutes to geological work.

Thus what would have been a "Comedy of Errors" has turned out to be "All's Well that Ends Well." Texas CPGs learned much from this experience, and offer three suggestions:

1. Be vigilant -- establish a watchdog organization to keep an eye on all legislation having any bearing on our profession, so it can't sneak up on you.

2. Coordinate the action, and get your story straight. Establish a specific policy or recommendation, and stay with it, or modify it by agreement. Caucus before conferring with others.

3. Use your influence -- geologists have lots of friends, as well as strange bedfellows who make useful allies. Keep your base as broad as possible. Pull all the strings, and capitalize on your nuisance value if necessary. In other words, fight flat and claw all the way, and make your presence felt. You will be remembered and consulted on future occasions.

As an afterthought, the West Texas Geological Society has recently published a newsletter congratulating its own committee "with others" for amending the Senate bill. Unfortunately, the amendment to which they referred contained the "provided" language we were fortunate to delete. The West Texas Society, of course, a most valuable ally, and while AIGP had no previous indication of its participation in the campaign, we do not wish to minimize whatever contribution they may have made, and shall be happy to award them a battle star. Here again, coordination would have helped us all, and this AIGP can provide.

The Texas Section, under the presidency of Mr. Halbouty, is establishing a Legislative Committee to maintain surveillance over future legislation, and to recommend and coordinate timely future action if needed. We commend our mistakes and the lessons learned to the attention of other sections who may suddenly find themselves in similar situations.
SUGGESTIONS TO SPONSORS

As a consequence of reviewing the hundreds of AIPG applications, the officers of the Institute charged with approval authority offer the following suggestions to sponsors of geologists applying for membership:

1. State your own qualifications. You must be an AIPG member, or a geologist who is a full member of an AGI-affiliated society, or a member of one of very few other scientific societies. Members of SPE are not eligible to serve as sponsors, nor are members of AAPG-affiliated geological societies not also members of AAPG, nor non-geologists.

2. Write a useful letter. Form letters are of little value, and do not do justice to the applicant. We are not interested in mass production nor short cuts. Try to say something that will give the applicant his own distinctive quality, and don’t be afraid to mention the soft spots or questionable areas. Write something other than cliches.

3. Send in your letter promptly, direct to Golden. Do not delay writing unless necessary to complete an investigation. Late letters hold up processing and approval.

4. Don’t sponsor at all if you don’t know the applicant, or if you don’t think he’s qualified.

THE ROCKPILE

The March issue of Petroleum Engineer reports that Gulf Oil Corp. has completed its fourth discovery in Nigeria in recent months, as a prolific dual producer through small chokes. The well is offshore in a 1000-sq. mile concession, and produces from 9100 and 9900 feet.

The area already successfully prospected appears to establish the Nigerian development as of major potential international importance.

L. G. Weeks (CPEG 278) presented a paper entitled “An Assessment of the Hydrocarbon Resources of the Seas” at a symposium on “The Mineral Resources of the Seas” at the February Annual Meeting of the Society of Mining Engineers of AIME, in which he discussed offshore sedimentary basins of the world out to the 1000-foot water depth contour.

Mr. Weeks’ investigations show that the offshore basin area, out to the 1000-foot contour, is equal to one-third of the world’s land basin area, and already contains 16% of world oil reserves and 15% of world oil production, with these figures increasing. More than 60 countries are now actively exploring or producing offshore.

The relative importance of offshore basins, with predominantly Tertiary or Mesozoic-Tertiary sediments, is emphasized by comparison with land Mesozoic-Tertiary basins, which are estimated to contain close to 90% of world oil reserves. Mr. Weeks’ studies have shown that such young basins have decidedly higher per acre yields than do the Paleozoic basins of the world.

The Massachusetts Dept. of Public Works and the Boston office of the U.S.G.S. are jointly concerned over the effect that increasing use of salt on icy highways may have on the quality of ground water. Preliminary studies show the salt washed off the highways has a perceptible effect on the chloride content of nearby ground water samples. A series of continuing detailed analyses is planned to survey the extent and rate of progress of the contamination.

H. J. McGarr (CPEG 188) of Redding, California has reported an interesting series of determinations made on the gold content of selected waters of California and Nevada.

Gold is present in terrestrial waters in greater abundance than reported in the seas, and Mr. McGarr has found it in ionic form, as colloidal particles, as part of suspended rock particles, or complexed with organic materials; colloidal gold is probably the dominant extractable form. The Sacramento River is estimated to carry over $12,000,000 in recoverable gold to the sea each day. Seasonal variations in gold content of the various streams appear to be characteristic.

In Northern California Mr. McGarr has found values per metric ton of up to $0.0936 in lake waters and $1.415 in streams. Analyses of spring waters in Nevada range up to $0.0484, with a value of $0.0486 in a single Arizona well-water sample. These compare with sea-water values of $0.001 or less per metric ton. Laboratory investigations, according to Mr. McGarr, are currently inconclusive but indicate the possibility of economic extraction from terrestrial waters.

Cloud Seeding

The following conclusions on the current status of weather modification have been compiled by Mr. John T. Carr, Jr., Hydrometeorologist of the Texas Water Commission, and are abstracted from Bull. 6504 of the Commission:

“A seedable cloud must be provided by nature before dispensing seeding materials can have any possible effect -- dispensing seeding materials does not make clouds in a cloudless sky. The determination of which clouds are seedable should be made by a qualified meteorologist. The results of all weather modification experiments should be evaluated by scientists and published in scientific media.

"Isolated supercooled convective clouds have at times responded favorably to seeding by producing rain in some cases when rain would not have occurred naturally; in some other cases rain has been caused to fall earlier by seeding than would have been the case if the seeded cloud had been left alone. Selectively seeding supercooled clouds in special meteorological situations may cause more rain to fall from certain types of frontal clouds as the frontal system passes by than would have fallen naturally. . . .

"A gap exists in weather modification experiments conducted to date, as no weather modification experiment covering a period of time sufficiently long to establish statistical significance has been conducted with the goal of determining if precipitation can be increased in a given area by seeding every seedable cloud forming or coming into the selected area. Such an experiment will have to be conducted eventually to establish whether the present state of the science of weather modification is at a level where cloud seeding on a routine basis is economically feasible."
THE "GOOD FRIDAY" ALASKAN EARTHQUAKE -- ONE YEAR LATER

One year after the event, the USGS has released an anniversary summary of the effects of the "Good Friday" Alaskan earthquake, which is abstracted herewith.

Regional changes in land level created by the earthquake are closely related to a northeast-trending zone of seismic activity which contains the original Good Friday earthquake and thousands of aftershocks. Most of the seismic zone shows little or no change in land level after the earthquake, but adjacent to this zone and west of it a belt of about 30,000 square miles sank as much as 6 feet. To the east, an area of as much as 50,000 square miles has risen, locally more than 33 feet. These vertical changes in the land and seafloor necessitate remapping and recharting vast areas in south-central Alaska.

The lessons from the Alaskan earthquake are clear, the Survey says. In earthquake country a basic knowledge of geology is vital to planning safe sites for communications and transportation routes, industry, and residences. This knowledge is equally necessary to the engineer charged with designing structures to withstand earthquake stresses.

In Alaska, teams of geologists and engineers, working closely together, guided reconstruction efforts, advised builders on geologic hazards, and suggested ways of minimizing or avoiding these hazards. In Anchorage, previously published reports of the Geological Survey provided much of the data and guidelines needed for planning.

Elsewhere, as at Valdez, Geological Survey geologists diagnosed post-earthquake effects and prescribed a drastic cure -- move the town.

The problem at Valdez is an excellent example of how geologic knowledge can help man adjust to his environment. Valdez, with a population of 1300, is a seaport town. It lies at the head of Valdez Arm, a fiord carved during the Pleistocene by a tongue of glacial ice from the Chugach Mountains. As glaciation waned, the ice tongue retreated eastward past the present site of Valdez, and left in its wake the narrow steep-walled fiord that is now Valdez Arm. Meltwater from the glacier carried fine-grained rock debris, clay, and silt into the head of the fiord where a delta was formed.

The upstream margin of the delta and its surface were broad and flat, but the delta front, hidden by the waters of Valdez Arm, dropped precipitously to the bottom of the fiord. Here, when the earthquake struck, submarine slides along the steep delta front ripped out the Valdez waterfront and port facilities and generated a wave which smashed back at the city with devastating force.

At Valdez, geologic investigations after the earthquake showed that the delta front remains potentially hazardous and it was recommended that the port facilities and much of the city be moved to a relatively stable geologic site on the north side of Valdez Arm. Relocation of much of Valdez is already under way.

Similar submarine slides and sea waves struck elsewhere in South-Central Alaska, where geologic conditions resembled those at Valdez.

The effects of Alaska's Good Friday earthquake have already indicated the urgent need of much more and better scientific knowledge in order to live with the earthquake problem. To meet this need, the Geological Survey has proposed a broad program of earthquake studies in Alaska and in California which would cost only a fraction of the estimated Alaska earthquake damage of 205 million dollars.

In both California and Alaska, geologic studies of communities or thinly populated areas will be started to evaluate geologic hazards and to help guide planning for the future. The California studies will concentrate on the San Andreas fault zone, a fracture some 600 or more miles in length along which earthquakes have repeatedly occurred.

Detailed geologic studies of the San Andreas fault are planned for better understanding of the mechanism of major earthquakes, and a variety of geophysical techniques will be used to probe deep beneath the surface and to further our knowledge of energy distributions within the crust of the earth. Hopefully, some of these studies will provide the basis for a system of earthquake prediction. Studies of physical properties of different geologic units are planned to help interpret differing responses to seismic energy, and to aid engineers in minimizing damages through proper building design. Research into such destructive geologic processes as submarine slides and landslides forms an integral part of the program.

Man has learned much from the Good Friday Earthquake, and much of what he has learned can be used to diminish loss of life and damage when the next great earthquake strikes. The USGS feels that another strike is certain, for the Pacific Coast States lie within the circum-Pacific zone of high earthquake activity. Within this zone, earthquakes are as much a part of man's environment as is the climate; and just as he learns to adjust to the weather, so must he adapt to the geologic hazards of earthquakes. Clearly, "preventive geology," like preventive medicine, will play an increasingly significant role in helping man to live safely and securely in his environment.

SUGGESTIONS TO SCREENERS

The screening process is an indispensable step in proper evaluation of an applicant. Please be sure:
1. The application is complete (including hours of geology, all years and locations in professional life, degree of membership claimed in scientific society, etc.);
2. The sponsors and references are qualified;
3. There are no ambiguous or hidden meanings; and
4. All unusual or questionable circumstances are investigated -- by you.

An inadequate screening job will require return to the section, or may result in admitting an undesirable applicant. Approval for membership in effect condones any past irregularities, so a special effort is required to detect them prior to approval. Once a member is approved, expulsion can only be based on post-approval offenses.
ROCK MECHANICS SYMPOSIUM

The VII Symposium on Rock Mechanics will be held at Pennsylvania State University, University Park, Pennsylvania, June 14-16, 1965, under the joint sponsorship of Colorado School of Mines, University of Minnesota, University of Missouri at Rolla, Pennsylvania State University and Society of Mining Engineers, AIME. Registration is on Sunday evening, June 13. Emphasis will be on the theme of Drilling and Blasting.

VOICES FROM THE PAST

"If there be anything determined in geology, it is that the surface of our globe has been subjected to a revolution within 5,000 years, and that this revolution buried the countries formerly inhabited by man and modern animals and left the bottom of the former sea dry as a habitation for the few individuals it spared. Consequently, our present human societies have arisen since this catastrophe."

...George Cuvier (1825)

LETTERS TO THE EDITOR

Dear Sir:  March 24, 1965

I would like to know if the A.I.P.G. will have available to its members a code of ethics which they may display. I feel that the public implication is one which warrants such display.

Very truly yours,
William H. Kay (CPG 26)
Denver, Colorado

Sir:  March 15, 1965

I was disturbed by the letter from Robert B. Hall of New York in your January, 1965 issue of The Professional Geologist. His opinion, and I quote, "The zeal for registration may really be a hidden desire to create a closed shop for those who have assumed the title of Engineering Geologist after a few years experience in that field," is a distinct disservice to the entire geologic profession. Such opinions, offered gratuitously and without facts, can only serve to further divide the already splintered geological profession.

As a member of the original executive committee for the California Association of Engineering Geologists I believe that I am in a much better position to evaluate the motives behind the organization of the association than Mr. Hall, and a "closed shop" did not have a place in our discussions. Examination of the membership list of the organizers should scotch such an innuendo.

The crux of the entire registration problem is stated in the above quote, "those who have assumed the title of Engineering Geologist." In my own experience I have seen what purported to be engineering geology reports which were entirely misleading and prepared by people with inadequate geological training and literally no experience in the Civil Engineering field. The California Association of Engineering Geologists was formed to try to bring to the Engineering Geology profession a society interested in their welfare and their professional standing. Registration was but one of many techniques discussed during the two year period this organization was in its embryonic stage. The concept of registration of Engineering Geologists was adopted with mental reservations but in the belief that no better technique could be devised to protect the public and the profession. Registration has been common in the engineering profession for many years. It has not inhibited the growth of individual engineers since multiple registrations are completely possible. It has in some ways created a closed shop but at least the practitioners in this shop are competent.

The possibility of policing within the organization of Engineering Geologists or such an organization as the AIPG was discussed and deemed to be completely impractical. Those people needing a geologist for the first and possibly only time in their lives have no knowledge of professional organizations or how to contact them for a membership list which might guarantee a certain minimum competency.

The ethical geologist is no problem. We can assume that he knows and respects his own field of competency. It is the hanger on, the lunatic fringe that infests the edges of the geological profession which cause the trouble and give to the entire profession an aura of the charlatan. These are the people who would be mostly affected by the registration law. Registration will not be a magic wand to immediately cure all the ills. The grandfather clause is a problem in itself, but eventually even grandfathers pass on to their reward. Personally I would be very happy to hear from Mr. Hall if he has some constructive suggestions, but being an "aginer" without either facing the problem or offering an alternate solution will not contribute to the profession of Geology or the branch of Engineering Geology.

Charles E. Hall
Los Banos, California

Dear Sir:  March 26, 1965

Lest you become "whelmed" beyond retraction over the popularity of your Fun and Games section of The Professional Geologist, we hasten to voice a dissenting cry.

It is our strong opinion that crossword puzzles belong in obscure corners of newspapers and comic books and not in the official organ of a professional society. Furthermore, to add to this questionable activity, the publishing of the name of the "time winner" is an incredibly juvenile practice.

Very truly yours,
Paul K. Morton (CPG 491)
Bennie W. Trotzel (CPG 220)
Los Angeles, California

(You're not going to make a man of our age mad by calling him juvenile. The decision not to continue the crossword puzzle in this issue was reached for reasons of space prior to receipt of this shipment of lemons -- or are they sour grapes? All other response to date has been favorable, and if circumstances permit we may run another puzzle later -- in an obscure corner, of course. -- Ed.)
QUOTES FROM THE QUACKS

From a description of a technical problem in a Texas well:

"At this time the well is making excessive gas per barrel of oil that we can handle to produce.

"We have excessive saltwater to deal with and this is an oil and gas driven oil and water well. We have been attempting to shut the water off and have to some extent, but due to not being able to handle the saltwater properly, we have shut the well in. The production in this well at this time is predominantly gas, and is from an area oil producing formation.

"The oil and water contact in this well is very tedious and definite, and difficult to control, and until we can see fit to handle the water content by a disposal well, the gas will be predominant factor. When we decide that it is economically feasible to properly handle the water, we can then no doubt bring this well in as a producer, but not a commercial producer because of the close water oil contact, and the water is gas driven. This well is a little low on structure."

From an Iowa newspaper correspondent:

"In reference to the violent earthquake in Alaska: When you stop to think that the continents are surrounded by movable water and that there are ocean or gulf streams which circulate away from the equator and along the coasts in certain vulnerable to earthquake areas, and when you stop to think that there are underground streams and some we have not yet discovered, and when one thinks of the ebb and flow of tides against the lands, perhaps undermining the land in certain places, then also when one stops to think about the large amount of mining that takes place and man’s distribution of the ore all over the world, man does tend to upset the natural balance of the earth.

"Then when one realizes that the earth revolving causes pressures and that man moves many things about, using up much energy in the form of fuel, and that under the earth’s crust are hot beds of matter which are evidences of volcanic actions, it gives cause for the belief that the earth’s crust rests on a rather slippery and liquid center over which the equalization of stresses can readily take place.

"Therefore it seems logical that these things and the simple movement of objects around on earth would change the balance of things faster than nature would be able to keep up because of the increasing amount of this which is being accomplished in modern times, including the shooting of interplanetary rockets and explosions of atomic bombs which release tremendous amounts of energy, should, in my opinion, contribute to earthquakes at more frequent intervals."

From a Colorado prospectus:

"Every oil field in the world has been caused by a volcanic eruption. The volcanic eruption starting from the center of the earth and going to the surface create a great heat, that extracts the oil from the sedimentary formations; the same as your stove extracts grease from bacon. This oil then accumulates in porous lime, sandstone, and shale, providing there is a structure for these to accumulate in. In describing a structure, it is no different than a saucer turned upside down. The oil would accumulate underneath the roof of the saucer. About one-half of the oil produced in the United States is found on volcanic and fault-closed structures.

(Here follows a description of the prospect.)

"The possibilities of the wealth that lies under this structure, I can only estimate by what has been found in other places. The sands that we expect to encounter are the Muddy, Brenton, Dakota, Morrison, Sun Dance, LaPlata, Shinarump and Weber. The above sands have produced over 39,566,150 barrels of oil up to 1940, in this State. The Shinarump and Weber sands which we expect to encounter are producing 26,811 barrels of oil per day in the Rangely field.

"If you had been fortunate enough to have owned 1% in the Rangely structure, you would be receiving approximately $400.00 per day, and that ain’t hay.

"As that opportunity has passed, here is another opportunity knocking at your door. I am going to offer you an opportunity to get in on the entire lease which I am developing. I am dividing into units, which I am offering for $50.00 a unit.

"We have only a limited number of these units for sale, so if you wish to get in on this opportunity, fill out the blank and mail it and your check .... and you will receive your Certificate of Ownership by return mail. If there is anything that you do not understand, we will be glad to come in person and explain it, in detail."

VOICES FROM THE PAST
(In 1804, President Jefferson sent Captains Meriwether Lewis and William Clark on an exploratory journey up the Missouri River with the ultimate destination of the Pacific. The following incident took place near Sioux City, and is described in the diary of Captain Clark, as edited by Bernard DeVoto. --- Ed.)

22nd August Friday 1804 --

"at three miles we landed at a Bluff where the two men sent with the horses were waiting with two Deer, by examination this Bluff Contained Alum, Copperas, Cobalt, Pyrites; a Alum Rock Soft & Sand Stone. Capt. Lewis in proving the quality of those minerals was Near poisoning himself by the fumes & tast of the Cobalt which had the appearance of Soft Isonglass. Copperas & alum is very pisen,

Capt. Lewis took a Dose of Salts to work off the effects of the arsenic."
Most geology departments in the universities of the United States have turned away from the problems of mineral resources and left the field to be divided between the engineer and the economist, and if, as some claim, geology is being relegated to the role of a colorful but relatively unimportant field science, it is largely because we are turning our back on the economic applications of our science. In my opinion, geology will flourish only if a large root remains firmly anchored in mineral resources. When our geological departments turn away from the economic aspects -- and political aspects -- of mineral resources to concentrate solely on the scientific problems of exploration, they take geology out of the human arena. The result is a loss of vigor, a lack of appeal to students, limited opportunities for graduates, and, most serious, a lessening of our capabilities to supply society with low-cost mineral raw materials. The true measure of success of a university is whether or not the institution prepares people to meet present and future problems, and one of the really great problems of the future is the problem of mineral resources.

"The geologist belongs in the field of evaluation of mineral property not because of any historical associations but because of what he can contribute to it. Evaluation requires more than measuring known ore and calculating the economic factors that control costs. Evaluation requires consideration of the probability of finding more ore. This is the vital contribution of the geologist. Neither the economist nor the engineer is equipped to treat this aspect of the problem."

Peter T. Flawn (CPG 430)
in Economic Geology, Jan. - Feb., 1965

I am very enthusiastic about the aims and ideas of the AIPG, and have felt the need for such an organization for some time.

"The public image of the profession needs boosting too. When I first moved to Baltimore and registered to vote, the woman behind the desk asked my occupation. I told her I was a Geologist. 'Oh,' she said, 'What hospital do you work in?'

Peter Hart (CPG 211)
Baltimore, Maryland

I cannot agree with a (recent) suggestion that all 'professional practical scientists' should be registered under a single act. I further disagree that A.A.P.G. should take precedence over A.I.P.G. in the matter of certification. The difference is professional competence in the broad field of geology versus scientific (or professional) competence in the field of petroleum geology. It is purely the difference between a general practitioner and specialist in medicine, both of whom are members of A.M.A., but one of whom might be a psychiatrist and a certified member of an organization of psychiatrists. Admittedly, the latter has status, but both first must
be registered members of the broad professional organization before registering in a specialty organization.

"If we must have a model law, I believe the term to describe the registrant should be 'professional geologist' and no such hokum as 'professional practical scientist' or 'earth scientist.'

"Why include geophysicists in legislation regulating geologists? They wish to retain their identity, and I do not see why we should require that they should lose theirs to become 'regulated' as geologists. If they have dual qualifications, register them for their geologic ability, and let them handle the geophysical aspects through their own professional group. Many geophysicists are fine geologists, and many are not qualified as geologists at all; those who possess dual qualifications may desire to be registered as geologists, but not at the expense of losing their professional identity.

"While I believe it is a mistake to register geologists in a state, by legislative act, I further believe it is an even greater mistake to register geologists under an engineer's act. There is no quicker way to lose identity.

"... I would prefer to see us exhaust every avenue of approach to achieve something as suggested by Warren Beebe concerning a chartered, fully recognized organization to regulate the practice of the profession in all states."

Irving T. Schwade (CPG 498)
Los Angeles, California

PROFESSIONAL PARAGRAPHS

DR. THOMAS S. LOVERING (CPG 668), of the U.S. Geological Survey in Denver, received awards from two societies in February in Chicago. He received the Penrose Medal from the Society of Economic Geologists, and the American Institute of Mining, Metallurgical and Petroleum Engineers gave him its Jackling Award.

JACK D. TAYLOR (CPG 237) has been appointed Vice-Chairman of the Oil and Gas Division of the Oklahoma City Chamber of Commerce and a member of the Board of Directors of the Chamber. He is presently Chairman-elect of the Research Committee of the Interstate Oil Compact Commission, and recently completed an 18-month job as one of the members of the five-man Task Force for preparing the Efficiency Study on the oil industry at the request of Secretary of Interior Stuart Udall.

PRESIDENT MARTIN VAN COVERING (CPG 1) recently toured the National Reactor Testing Station west of Idaho Falls, as a guest of U.S.G.S. representatives.

President Van Couvering is maintaining an active speaking itinerary on behalf of AIGP in addition to his administrative responsibilities. On March 27 he addressed the Far Western Section of the National Association of Geology Teachers at Ventura, California, and on April 8 he addressed the Third Annual Symposium on Engineering Geology and Soils Engineering at Boise, Idaho. On April 17 he spoke to the Business Luncheon of the Cordilleran Section of GSA in Fresno. President Van Couvering will also appear before the luncheon meeting of the Rocky Mountain Section of GSA at Fort Collins, Colorado on May 15.

The Institute is gratified to announce the receipt of an unsolicited cash donation from WARNER C. NORTHUTT (CPG 22) of Loveland, Colorado. This is a most tangible means of expressing the sincerity of a member's belief in the ideals of AIGP.

EDGAR W. OWEN (CPG 559) will speak at the dedication ceremonies of a new Geology Building at the University of Missouri at Columbia on May 15, and FRANK B. CONSELMA (CPG 4) will be the luncheon speaker. In the afternoon a panel composed of WILLIAM C. HAYES (CPG 125), ROBERT L. HELLER, CHESTER LONGWELL and W. W. RUBELY will discuss "Geology -- Where? Whither?" PROFS. A. G. UNKLESBAY and W. D. KELLER of the Department of Geology of the University are in charge of the dedication ceremonies.

RICHARD W. HARDING (CPG 17), AIGP Co-ordinator in Pennsylvania, has established a policy of arranging a local press release whenever AIGP certifies a Pennsylvania geologist. The release includes a brief statement of the history and purposes of AIGP, and appears to present a valuable means of acquainting the public with professional geology.

DR. ORLO CHILDS (CPG 146) and DR. GROVER E. MURRAY (CPG 94) were featured speakers at the 18th Annual Midwestern Meeting of the Society of Exploration Geophysicists at Tulsa, Oklahoma, March 28-30.

DR. ROBERT J. WEIMER (CPG 98) is president of the newly installed chapter of the Society of Sigma Xi at Colorado School of Mines.

DOAK C. COX (CPG 182) has been appointed Director of a new Water Resources Research Center at the University of Hawaii. His address is 2525 Correa Road, University of Hawaii, Honolulu, Hawaii 96822.

DILWORTH S. HAGER, DR. A. I. LEVORSEN (CPG 474), LEWIS G. WEEKS (CPG 278) and DR. FRANK B. CONSELMA (CPG 2), chairman, have been re-appointed to membership on the Geologists Committee of the Advisory Board of the International Oil and Gas Educational Center, at the Southwestern Legal Foundation, Dallas, Texas. EDGAR W. OWEN (CPG 559) is a new appointee to the committee.

DR. THOMAS B. NOLAN (CPG 475) was chosen as regional vice-president of the International Union of Geological Sciences at the 22nd International Geological Congress in New Delhi. Other AIGP members trying to attend were DR. LOUISE JORDAN (CPG 617), DR. GROVER E. MURRAY (CPG 94), DR. HOLLIS HEDBERG (CPG 223), DR. WILLIAM THURSTON (CPG 514), and DR. W. C. GUSSOW (CPG 203), but they were stranded in Srinagar due to heavy snow.
PROFESSIONAL PARAGRAPHS

DR. WOLFGANG E. ELSTON (CPG 301) will lead a study of lunar craters and terrestrial volcan-tectonic depressions under a $25,000 grant from NASA to the University of New Mexico. He will spend a year in Silver City, New Mexico mapping volcanic rocks of the Mogollon Plateau.

JOHN ROLD (CPG 448) has been named district geologist for California Oil Company in Billings, Montana.

NORMAN J. CHRISTIE (CPG 396) has been elected a director of Independent Exploration Company, which merged four Canadian geophysical firms and combined them into a single company under the direction of Mr. Christie.

H. A. KUEHNET (CPG 537) has been appointed exploration director of the mid-continent regional office of Phillips Petroleum Company in Oklahoma City.

DR. JOHN C. CROWELL (CPG 169) is investigating Permo-Carboniferous tillites; in the Falkland Islands under sponsorship of the National Science Foundation Office of Antarctic Programs.

Information Circular No. 41: Origin of Cascade landscapes, by J. HOOVER MACKEY (CPG 432) and ALLEN S. CARY (CPG 280) is available from the Washington Division of Mines and Geology, 335 General Administration Building, Olympia. 504.

KENNETH F. CUMMINGS (CPG 519) has accepted a position with Wolf Land Company at Denver.

DR. JOHN C. OSMOND (CPG 538) is currently on an AAPG Distinguished Lecture Tour. His topic is "The Geology of Nevada - An Exploration Frontier."

DR. GEORGE V. COHEE (CPG 470) has been elected President of the Geological Society of Washington, D.C.

DR. KENNETH K. LANDES (CPG 292) has accepted an appointment by the United Nations and the Israeli Government to act as coordinator in establishing an Institute for Petroleum Research at Azor, Israel. The appointment is for seven months, beginning January 1, 1965.

ROBERT L. SWANSON (CPG 359) has been elected President and B. H. BONEY (CPG 243) has been elected Treasurer of the Abilene Geological Society.

WILLIAM R. PAIN (CPG 728) of the University of Southwestern Louisiana is the new President of the Lafayette Geological Society.

New officers of the Rocky Mountain Association of Geologists are: President, C. L. SEVERE (CPG 72); First Vice-President, K. F. CUMMINGS (CPG 519); Second Vice-President, DUDLEY W. BOLYARD (CPG 81); Secretary, JOHN H. DOLLOFF (CPG 180); Councilor, JACK W. KNIGHT (CPG 116) who is also President of the Colorado Section of AIPG. Past President of this group is JOHN W. ROLD (CPG 448).

DR. DOAK C. COX (CPG 182) has been appointed Director of the newly-formed Water Resources Research Center at the University of Hawaii.

DR. WILLIAM A. WHITE (CPG 372), of the University of North Carolina, is the recipient of a $3,000 grant from the National Science Foundation. He will study the topographic effect of solution in coastal plains.