EARTHQUAKE NOTES

EASTERN SECTION
SEISMOLOGICAL ASSOCIATION OF AMERICA

R. R. Bodle, Editor
U. S. Coast & Geodetic Survey
Washington, D. C.

Vol. 1; No. 1 July 15, 1929.

Note:-This publication supersedes the BIBLIOGRAPHY OF SEISMOLOGY of the Eastern Section of the Seismological Society of America in accord with a decision reached at the New York Meeting on April 30 and May 1, 1929, and is prepared with the cooperation of Science Service, Inc.

The Bibliography of Seismology, relinquished by the Eastern Section at the New York meeting on the condition that adequate means should be found for continuing it under other auspices, has been taken over as one of the PUBLICATIONS of the Dominion Observatory, Ottawa, Canada. The first issue is to appear in the near future, and it is proposed to publish the second about July, continuing thereafter quarterly as was the case under the auspices of the Eastern Section. Members of the Eastern Section who wish to be put on the mailing list to receive this periodical are asked to address their request to the Director of the Dominion Observatory.

NOTES ON THE NEW YORK MEETING

The fourth annual meeting of the Eastern Section of the Seismological Society of America was a joint meeting with the Society. It was held on April 30 and May 1, 1929 at Fordham University, New York. Local arrangements were made by a committee of which Mr. John W. Tynan, S. J. was chairman. The success of the meetings was due to the facilities offered by the Father Rector W. J. Duane, S. J. who made the opening address at the first session, and also to the effective work of the local committee. The Fordham Seismological Station was open to inspection for an hour on each day of the meeting. The sessions closed with a dinner given by Fordham University with about 25 present at which after dinner speeches were made by Messrs. Tynan, Day, Hodgson, Macelwane and McAdie. On the evening of April 30 the members visited the Museum of Peaceful Arts at the Scientific American Building upon the invitation of the Director, Dr. F. C. Brown, and had an enjoyable and profitable evening.

The program included two business meetings and four sessions at which 26 papers were listed for presentation. All those by members present were given in full, and most of those by members not able to be present were read. The chairman was given authority to take any suitable action regarding such papers, except that it was understood that absence alone should not constitute a reason for not having a paper presented.

The average attendance at the meetings was about 40.

Minutes of first meeting.

The meeting was called to order by Chairman, Ernest A. Hodgson who explained that it was a joint meeting with the Society by action of the Board of Directors. The minutes of the last meeting as published in the bulletin of Bibliography were approved.

SECRETARY'S REPORT OF THE PROCEEDINGS OF THE NEW YORK MEETING

The chairman made a statement that the present plan of carrying on the bibliography of seismology cannot continue indefinitely. Too much burden is being placed on him personally and on the Dominion Observatory by the plan. The Dominion Observatory will probably be able to continue the bibliography and send it to every member of the Eastern Section. This however leaves the seismological notes and accounts of the Eastern meeting unprovided for. The following actions were therefore taken.

To meet the expressed views of the chairman Father Macelwane proposed the following motion which was duly seconded and passed: "Since the bibliographical bulletin has grown to such an extent that the Eastern Section can no longer finance it through the section dues, in order to bring the matter under discussion, I move that the bibliography be separated from the seismological notes and reports of section meetings and that the latter be expanded into a section bulletin within the finances of the section and that the bibliography be formally abandoned provided that it can be otherwise taken care of."

A motion was then proposed by N. H. Heck which was duly seconded and passed that the chairman be authorized to appoint three members of a publication committee of five, the other two members to be the chairman, ex-officio, the four to select an editor, to be the fifth member of the committee. The chairman on the same day appointed Ernest A. Hodgson, James B. Macelwane and James Stokley, the first named to be chairman. (R. R. Bodle of the U. S. Coast & Geodetic Survey was later appointed as editor.)

The usual action of authorizing the chairman to appoint two members to serve with the elected officers as the Executive Committee of the section was taken.

Pending the adoption of a new constitution of the Society the dues were fixed at $1.00 per year. The Executive Committee was authorized to fix the time and place of the next meeting.

The report of the nominating committee consisting of Messrs. Mather, Wenner, and Joliat was adopted except in the case of the vice Chairman and the secretary was instructed to cast an unanimous ballot. The result was as follows: Chairman, Alexander McAdie; Vice Chairman, Joseph Lynch, S.J. (Received 8 votes to 3 for Don Leet); Secretary, N. H. Heck; Treasurer, Frank Neumann. Later the chairman appointed James B. Macelwane, S.J., and Ernest A. Hodgson as members of the Executive Committee.

The resolutions committee consisting of Messrs. McAdie, Lynch and Young presented several resolutions which were adopted. They dealt with the death of Col. E. Lester Jones; appreciation of the work of the Dominion Observatory and especially Dr. R. Meldrum Stewart and Ernest A. Hodgson in making the bibliography of seismology possible; encouragement of collection of detailed reports of earthquakes in the field in three active regions of the East (desired by the Division of Geology and Geography, National Research Council, Arthur Keith, Chairman); also appreciation of the fine hospitality shown by the Officials of Fordham University.

Treasurer's Report - Eastern Section
Seismological Society of America.
April 22, 1929.

RECEIPTS

Balance on hand, April 5, 1928	$190.88
Dues, 1928, 47 members	47.00
Dues, 1929, 161 members - less 20¢ for collection	160.80
Dues, S. S. of A.	9.00
Total receipts	$407.68

DISBURSEMENTS

Meeting expenses 1928	33.10
Travel expenses, 2 officers	72.00
Dues, Society	9.00
Dues collection	10.11
Membership campaign	30.63
Stationary, chairman	18.14
Total disbursements	$172.98
Balance on hand, April 22, 1929	$234.70

N. H. Heck,
Treasurer.

Washington, D. C.
April 27, 1929.

To the Chairman of the Eastern Section of the Seismological Society of America:

Your Auditing committee has examined the accounts of the Secretary-Treasurer for the fiscal year ending April 22, 1929 and found them correct. The statement of receipts and expenditures summarized above has been verified and the balance of $234.70 found to agree with the statement of balance furnished by the Union Trust Company of Washington on March 20, 1929 of $213.93 plus deposits since that date of $33.00 and less two outstanding checks amounting to $12.23.

Respectfully submitted,

Frank Wenner
James Stokley
Jos. S. Joliat

PUBLICATION OF NEW YORK PAPERS

Most of the papers given at the New York meeting will be published in the BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA which will be sent to members of the society.

SOME EARTHQUAKE CLUSTERS IN EASTERN UNITED STATES

By Dr. Arthur Keith.

This paper is not ready for publication as it was an informal account of progress. It brought out the strong value of small earthquakes felt over a small area in studying the relations of earthquakes to geological formations since the epicenter is accurately known.

ABSTRACT

AN APPLIANCE FOR FIXING SMOKED PAPER RECORD SHEETS

By
Arthur J. Weed

This paper treats of the advantage of using a thin transparent paper for smoked record sheets and the disadvantage of handling such a paper as is usually done in fixing.

The appliance consists of a small piece of thin brass tubing attached to the inside of the tank holding the fixing solution.

The tube held on an arm by which it is swung upward into the air until the one end of record sheet is placed below after which it swings down into the fixing solution and the record sheet is drawn underneath the tube with the smoked surface down.

The piece of tubing smooths out the irregularities in the record sheet and produces a clean, neat looking record.

Lantern slides were used to show the construction of the tank and its manner of working.

ABSTRACT OF FATHER JOLIAT'S PAPER

PROGRESS AT THE FLORISSANT SEISMOGRAPHIC STATION

This paper chronicles and discusses various stages in the development of this new station, and some of the problems met and solved the past year in adjusting the instruments to function so as to give the best results. The seismograms show that traffic disturbances and fluctuations of temperature have practically no effect, while humidity is controlled very effectively by means of calcium chloride.

To economize space the piers were placed adjacent to the walls both forming one continuous mass of reinforced concrete. While this may and probably does not give as perfect insulation from outside interference (wind, frost, etc.), as might be desired, still it seems to have the following advantages: walking about inside the vault does not affect the instruments by tilt etc; the piers are not free to vibrate independently of the vault as a whole and the vault is so tightly gripped in the clay around and above it that it cannot move except as the earth moves. More than two hundred earthquakes have been recorded in eight months.

THE SEISMICITY OF THE ARCTIC

By
Ernest A. Hodgson
Dominion Observatory

Abstract of Original Paper

Severe shocks are very rare in the Arctic. Volcanic shocks are not infrequent in Iceland and Jan Mayen and more earthquakes are recorded from Iceland to Spitzbergen than elsewhere, this region being the northern end of the mid-Atlantic sub-oceanic plateau. Shocks outside of this region have been recorded as occurring at the mouth of the Lena River in Siberia and near the mouth of the Mackensie River in Canada. Doubt is expressed as to the accuracy of some of the determinations of Arctic earthquakes as given in the International Seismological Summary.

More than 100 records have been obtained at Ottawa of earthquakes which could not be located with records from existing stations but which appeared to come from the North and with distances corresponding to the northern edge of the North American continent. Installations to be made in near future will help in locating such earthquakes.

ABSTRACT OF PAPER

PROBLEMS OF SEISMIC INVESTIGATION IN NORTHWESTERN NORTH AMERICA

By
N. H. Heck

Seismicity of this region which includes the Aleutian Islands and adjacent active submarine areas varies from minor volcanic earthquakes to world shakers. The relatively small damage from even the greatest earthquakes makes this a good region for study. Responsibility for this region seems to lie with the United States and Canada. The latter has a first class station at Victoria.

Three possible plans are suggested. Local earthquake study by either the Japanese method or the California method (In the first case insensitive instruments which will survive heavy shocks and in the second highly precise and sensitive instruments) and teleseismic study from a few well placed stations. Dr. Jaggar is doing something with the first plan. The second plan is not practicable

on account of expense and lack of sufficient trained personnel. The Coast and Geodetic Survey is undertaking the third plan with an improved station at Sitka and a cooperative station at Fairbanks. Other first class stations in central and eastern United States and Canada will be of value. The difficulties of installation at Fairbanks due to perpetual frost were described. When the proposed new installations are in existence investigation of earthquakes in this region will be more effective.

ABSTRACT OF McADIE PAPER

He proposed the following modification of Mercalli Cancani scale, each number in a scale of ten to represent a definite acceleration. The lowest represents 1 millimeter per second per second and the highest 10,000 millimeters per second per second. The latter is practically the acceleration of gravity and, if we use the dynamic meter, has the same value.

The scale below stresses the measurement of small accelerations. The term kilogal (the prefix denoting 1000, followed by the first syllable of the word Galileo). Estimating as no. 10 maximum acceleration 1 kilogal, equivalent to gravity, and 100 milligals as the acceleration of the feeblest earthquakes we have.

EARTHQUAKE SCALE OF INTENSITY

Grade	Description	Displacement per second per second.		
1	Detected by instruments only	1,000	=	100.0 milligals
2	Very feeble	10,000		1.0 gals
3	Feeble	25,000		2.5 "
4	Noticeable but without alarm	50,000		5.0 "
5	Felt generally & commented on	100,000		10.0 m"
6	Slight damage	200,000		20.0 "
7	Walls cracked	500,000		50.0 "
8	Destructive, badly built houses thrown down	1,000,000		100.0 "
9	Much destruction	2,000,000		200.0 "
10	Catastrophic	10,000,000		1.0 kilogal.

Comment by Father Macelwane and others.

May I ask on what basis the assumption of a particular period is made in this scale? It is clear, of course, that the amplitude A can be calculated from the formula for the acceleration $f = 4 n^2 A^2$ only if the motion is simple harmonic. Most of the earthquake vibrations are not simple harmonic and they involve a wide range of frequencies, so that it would appear to me illusory to coordinate the accelerations with definite amplitudes. Besides, we should need to know much more about the physical factors constituting destructivity and about the psychological and other factors which determine perceptibility of earthquakes before we can give quantitative acceleration equivalents for the field intensities as usually determined.

It would seem that the best we can do for the present is to choose an arbitrary field scale that best suits the region and to publish in each case the

criteria we have used to define intensity so that our data can be utilized by other investigators. Then I think it will make little difference whether the scales are uniform or not. Meanwhile we hope for the day when our knowledge will justify such a quantitative scale as Professor McAdie suggests.

Dr. Day points out that accelerations are not generally measured. The case of Santa Barbara points out some of the great difficulties in the application of intensity scales. The destruction at Santa Barbara was confined to a single street while the parallel streets on both sides had the same intensity of shock. The difference was in the construction, the damage occurring where new and old structures were combined with insufficient bond.

Dr. Keith suggests that use of R. F. scale so arranged that people include the essential facts but stop at a certain point without consciously realizing that they are following a scale is the most satisfactory plan that he has found.

Mr. Young states that experiments have shown that human susceptibility to vibration is dependent upon frequency, particularly when the frequency is smaller than two vibrations per second. A vibration of small amplitude and high frequency will not produce the same effect as one of large amplitude and low frequency although maximum acceleration in the two cases might be the same.

This fact has led engineers working in the field of vibration to search for a new basis for measuring human susceptibility. The most satisfactory basis where accelerations are smaller than 5 ppc. of g is to use the average speed during one cycle = 4naf where "a" is amplitude and "f" is frequency. On this basis a speed of .25 cm/sec. is just perceptible and a speed of .50 cm/sec would correspond to an intensity of 5 on the M. C. scale.

A letter from Dr. Jaggar which was delayed and did not arrive till after the meeting has the following comments:

Referring to the M. C. scale as furnished he states that he prefers expression of the acceleration in millimeters per second per second rather than in percentages of gravity, and is curious to know why the latter is used in copy of M. C. scale. He is also inclined to object to such long paragraphs under each number, and to using 12 divisions instead of 10. The general public will not use such a scale in answering post cards as the lay mind is scared off and answers not at all when it does not know (1) what nausea is, (2) it has no upper floors, (3) it has no tall structures, (4) it does not know the meaning of "apprehensive from previous experience", (5) it has no pendulum clocks, (6) it does not understand about pendulums being parallel with the earth's vibrations, (7) it has no church bells to ring, (8) it has not six different kinds of masonry available, including adobe, to judge from, (9) it does not know what turbid means, (10) it has no statues or monuments to rotate, (11) it does not know what decayed piling is, (12) it has no available reservoirs, (13) it does not know what fault slips are.

In general the public is densely ignorant, and the M. C. scale is devised for intensely interested engineers and educated persons ready to make an exhaustive study. He sent out such a scale all over Hawaii on October, 1913, after a strong earthquake and got not a single reply. The paragraphs should be boiled down to three lines, each of ten numbers, and the data limited to information applicable in either a village or city.

THE WORK OF THE SAINT XAVIER SEISMOGRAPH STATION

By
Vincent Herr, S.J.

During the last year several improvements have been made in the equipment of the Cincinnati Station. These include the installation of a Galitzin-Wilip Vertical Seismograph, as well as a Television Seismic Alarm system and provision for correcting the time marks directly from Annapolis at 12 P.M. and 10 P. M. The signals are picked up from NAA by a special short-wave receiver. Time corrections are at present placed on the records by the ear method, but it is hoped that in the near future, a relay will be incorporated in the loud-speaker circuit of the receiver for marking the Arlington beats directly on the seismogram. This will eliminate the personal equation entirely. The variation of the clock system is at present not more than two seconds in 24 hours. Sometimes there is no variation over a period of several weeks, but, owing to changes in temperature, the clock pendulum may undergo this slight variation. It does not seem expedient to enclose the pendulum in a temperature-proof chamber on account of the difficulty in maintaining constant temperature in any chamber of such large dimensions. The evidence used in measuring the mean variation of the clocks was the record of the Galitzin instrument. On this record, the lines are absolutely without tilt and the minute marks describe perfectly straight lines diagonally across the record. Hence the whole system of time recording is as reliable as can be expected from a station not equipped with an expensive astronomical clock.

As regards the Seismic alarm, the fundamental unit is the photoelectric cell of the television sets. Thru the courtesy of the General Motors, several hook-ups used in other warning devices were secured. Experimenting with these it was found that the one stage Radio amplification hook-up was both economical and successful. The hook-up employs a two-inch sodium-hydride coated photo-electric cell for the light sensitive surface. The surface carries 135 volts D. C. in series with the plate of the Radio amplification tube as well as the core of the high-resistance relay. A current of about 5 milliamperes will flow thru this plate circuit in the dark unless a grid bias is used. About ten volts bias are needed across the grid and a minus determined by a potentiometer in order to keep the dark current down to a fraction of a milliampere. Then as soon as the cell is illuminated, the plate current jumps back up to 5 milliamperes and closes the relay, from which any bell or switch circuit may be operated.

Certain difficulties must be obviated when adjusting the light circuit to prevent stray beams of light from reaching the photographic paper on the drums. We have placed a second lamp house on the pier carrying the galvanometer and recording system of the Galit-zin Vertical. The beam of light from this second lamp makes an angle of about five degrees with that from the recording lamp of the instrument. It is focused by means of a lens system so as to strike the mirror of the galvanometer as a point. The reflected beam is about the size of the photo-electric cell when it strikes it and can be adjusted so that it just misses the cell when the galvanometer mirror is at zero position. Then the slightest deflection of the mirror will cause the cell to become illuminated and the relay to close. The record of the disturbance upon the recording drum is not in the least affected by the warning device. By placing the light-sensitive cell nearer or farther from the beam of light, the system will react to more or less violent earthquakes. To date, ten earthquakes have been of such a nature as to operate the warning device. Obvious points of advantage derived from such a system are: Closer touch with the operation of the otherwise invisibly recording photographic instruments; and more

immediate data on the nature of the earthquake activity at a given locality. As to the first, no one will deny that it is an advantage to know just when the instruments are recording a disturbance and when not. An adjustment may be needed on one or other instrument, or lights may need to be made more brilliant if the vibration is a rapid one; and in general, should trouble occur in any place, the time of the earthquake is above all the moment you would like to know of it and to have things operating smoothly. And the beauty and legibility of the gram are always enhanced by the fact that the last lines on the record are those of the earthquake. As to the second advantage, apart from the advantages one receives by being prompt in reporting earthquake information to the public, it seems to us that if any progressive work is to be accomplished in the rapid determination of earthquake centers, immediate knowledge of the occurrence of a disturbance is almost essential. Should more stations decide to include the alarm in their equipment, code messages over the wires would be more prompt and reliable. Even radio broadcasts might be introduced to hasten the determination of the epicenter by several stations.

Points of economy connected with this hook-up are the following: So-called 'dead' radio tubes may be employed in the amplification circuit. Three tubes might be used instead of one and then the luminosity of the source could be diminished. Greater sensitivity would be had at the cost of economy, and the one tube amplification can be adjusted to signal for earthquakes that throw the recording beam on the Galitzin 25 mm. Greater sensitivity than this is not desired, I think. The sensitivity of the hook-up also varies with the plate voltage used. However, a certain maximum is reached, beyond which the life of the photo-electric cell is diminished. If the voltage is kept at about 135 in the dark, the cell will not glow visibly, and its life is indefinite under these conditions. Moreover the dark plate current can be adjusted so that the life of the B-batteries is equal to that of ordinary 'stored' batteries. Finally, definite knowledge of the duration of a given earthquake by means of the seismic alarm will at times be responsible for a saving in the expensive photographic recording paper. One needs not depend upon the AP dispatches in order to know when to change the records. And our alarm has proved so reliable that in case the Press desired information on a given 'locally destructive' earthquake, before the records have been developed, and estimate of its intensity as recorded on the seismographs here can be given. In fact the seismic alarm can truly be said to take the place of the smoked-drum visible record, with the added feature of the sensitivity of the optically magnifying instruments.

With regard to the New Galitzin-Wilip Instrument, we have been exceptionally well pleased with its operation. During the Xmas holidays, the constants were determined, and future bulletins of the Seismographic Station will very probably contain reduced amplitudes, at least in the case of the vertical component. Some little difficulty was at first encountered in causing the temperature compensator to function properly for our temperate climate. It seems the adjustment must have been set for a much lower mean temperature, such as that at the University of Tartu where the pendulum was set up for inspection previous to shipment. There were about eight earthquakes in which the initial impulse was sufficiently strong to enable one to state with accuracy whether it was a condensation or a rarefaction. In practically all these cases, the beginning of the primary waves was sufficiently clear on the horizontals to make possible a fairly accurate determination of the epicenter later verified by reports from other stations.

An interesting experience was had here in Cincinnati in connection with the Ohio earthquake of March 7, 1929. It happened that on March 6, 1929, a severe

disturbance was recorded and the epicenter, as determined from our horizontal and vertical components, was, in the Alaskan region. The amplitude of the throw on the Galitzin was easily measured while the quake was still going on. The earth amplitude was reduced and reported to the Press. There happened to be a mild cyclone in this region at the same time, so the headlines of the morning papers carried the interesting data, that 'Cincinnati feels earthquake as well as cyclone, earth moves 1/50 of an inch!! Now little did we know that on the following night, (morning of March 7) Ohio would actually be shaken by an earthquake. But certain people of Cincinnati were so wrought up by the fact that the Alaskan earthquake moved the ground 1/50 of an inch and that on the following night several people were awakened by the rattling of dishes, that all day long telephone calls were received asking for information concerning the nature of the Ohio quake, its cause, the probability of another shock, etc, etc. Every one here was strongly in favor of a more thorough investigation of the earthquake and of earthquake peril in this vicinity.

The Wood-Anderson records of this shock were quite clear but much cooperative study will be needed to understand all the phases. The initial throw indicated that the origin was North East of Cincinnati, provided the force were a condensation. Since the primary waves did not register on the long-period instruments, and no successful short-period vertical is in existence, we cannot hope to solve the question from instrumental data. This might be an argument for the construction of a short-period vertical.

EARTHQUAKE MOVING PICTURE

By
Kirtley F. Mather

This picture gives a vivid idea of the paths and speed of the various seismic waves. The picture as developed by the Pathe Corporation at Harvard University is an excellent adjunct to a lecture on earthquakes. It may be rented from the Pathe Exchante at $5.00 for each showing.

COOPERATIVE PLAN FOR COLLECTING EARTHQUAKE INFORMATION

Under the revision of the arrangements for collecting information on felt earthquakes several organizations have agreed to cooperate with the U. S. Coast & Geodetic Survey. For the area east of the line along the western boundary of Louisiana to western Minnesota the Section of Geology and Geography of the National Research Council,- Dr. Arthur Keith, Chairman,- will have charge. For the area west of that line, except California and Nevada, the Washington Office of the Coast & Geodetic Survey will be responsible. In California and Nevada several organizations will cooperate with the Inspector in Charge of the Coast & Geodetic Survey Field Station at San Francisco.

The above plan went into effect in May 1929. The California area has been under development for a time previous. Reports indicate that a fine spirit of interest and cooperation exists among the commerical organizations which have

been asked to lend their assistance.

After information has been collected at the various centers it will be made up into standard form and published in the quarterly reports of the Coast & Geodetic Survey.

EPICENTERS

Positions located to June 16, 1929. Through cooperation of Science Service data is exchanged between the Coast Survey and the central office of the Jesuit Seismological association where independent determinations of epicenters are made. The following are means of the two determinations.

Date 1929	Time h	m	Latitude	Longitude	
May 1	15	37.7	39 N	55.5 E	
" 20	4	53.0	54 N	177.6 W	
" 26	22	38.8	54.5 N	138 W	
June 2	21	38.5	40.5 N	140 E	
" 9	9	08.1	46.6	152.8 E	
" 13	0	12.5	45 N	153 E	(USC&GS only)
" 13	0	26.1	47 N	153 E	" "
" 13	9	24.9	13 N	126 E	" "
" 16	22	47.0	41.2 S	172.6 E	

Attention is drawn to the report in Science News-Letter, 15, No. 417, 206, April 6, 1929, of the discovery of a submarine valley and ridge by the Carnegie. The report states in part: "The deep was discovered on February 16 with the sonic depth finder, Dr. John A. Fleming, acting director of the Department of Terrestrial Magnetism of the Carnegie Institution and owner of the vessel, announced to Science Service. Within a distance of 50 miles the depth of the ocean changed from 2,700 meters to 5,400 meters and back to 4,100 meters, the drop being about a mile and three quarters and the greatest depth being about three and a third miles. Capt. Ault names the depression the Bauer deep, after Dr. Louis A. Bauer, director and organizer of the Department of Terrestrial Magnetism.

The submarine ridge was discovered on the voyage from Easter Island to Callao, northeast of the island of San Felix, which is off the west coast of Chile. Its position is approximately 80 degrees west longitude and 23 degrees south latitude. It extends about three thousand meters, or nearly two miles, above the surrounding ocean floor, and is a continuation of the ridge that forms the San Felix islands. It has been named the Merriam ridge, after Dr. John C. Merriam, president of the Carnegie Institution."

We learn from Science that: "Dr. Bailey Willis, emeritus professor of geology at Stanford University and research associate in seismology of the Carnegie

Institution of Washington, is now in London on his way to East Africa to make a study of the earthquakes of that continent. He plans later to visit India, the Dutch East Indies and the Philippines.

An interesting account of the numerous earthquakes of 1928 in Mexico (over 200) is given in Science, 69, No. 1787 x, March 29, 1929, which reports a recent publication on the subject by the Institute of Geology, Mexico City.

BERKELEY MEETING S.S. OF A.

The Seismological Society of America held an interesting meeting at Berkeley, California, on June 20th in connection with the Thirteenth Annual Meeting of the Pacific Division of the American Association for the Advancement of Science and it's associated Societies. One of the many interesting features of the program was the papers which dealt with earthquake resistence from the viewpoint of construction engineering.
