

chivalric and good in the character of the nation; an inspiration to all true lovers of liberty and justice and a symbol of the ideals of the American people. ALBERT A. HANSEN

WASHINGTON, D. C.

TRANSLATIONS MADE ACCESSIBLE

SCIENTIFIC papers written in some of the foreign languages present few difficulties to large sections of the scientific public, but translations are frequently desirable and sometimes essential. In the past such needs have been supplied by individual initiative and certain papers have been translated time and again. In these days when waste is more nearly criminal than foolish, and cooperation so easy, it should be possible for a worker who needs a translation of a given paper to find out whether or not such a thing is already in existence among his fellow workers before he starts the job anew. And if it is he should be able to secure a copy by paying for the necessary typewriting.

In place of following the somewhat customary plan of making the suggestion and commending it to the attention of this or that organization, the writer has started the compilation of a card catalogue showing the location of manuscript and published translations of books or papers on geology and paleontology and is willing to undertake the expansion of this catalogue to include all translations of papers in these sciences. To do this will require the cooperation of all persons or institutions possessing manuscript translations.

In return the writer will be glad to answer all inquiries regarding existing translations of specific books or papers and will furnish the names of persons or institutions willing to furnish copies of translations in their possession. He can start this at once, and already has records of nearly a hundred, though the value of the service will increase with the addition of new lists of available translations.

The writer realizes that these translations will not maintain a single standard, but he is certain that with few exceptions they will be valuable, and hopes to have the cooperation of his colleagues in making them all available.

Lack of time and the present-day need of hewing to a line necessarily limit this catalogue to papers on geology and paleontology, but the writer is ready and willing to turn over his data to any organization wishing to adopt the scheme in its entirety.

The working of the scheme is perhaps best illustrated by the following reply postal card, which has already been forwarded to the members of the geological and paleontological societies and will be sent to any one else on request:

REQUEST POSTAL CARD

N. B.: Please fill and forward as soon as possible.

Authors and titles of translations of papers in geology and paleontology which I am willing to share with other workers on the basis of their reimbursing me for actual cost of making typewritten copies.

(Space here for list, giving authors, titles and numbers of MS. pages.)

N. B.: Don't hold this card until you have occasion to use the space below; another card will be sent you by return mail.

Have you record of a translation of a paper by entitled published in

I am in no special hurry for this and will wait to join any one else, or will join any one who has been waiting, in order to secure a copy of this translation at the reduced rates made possible by the use of carbon copies.

In the event of your receiving other requests before for translations of the above paper I should be willing to share pro rata in the cost of having it translated.

In the event of your having no record of this translation please keep this request on file.

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The paper by has been translated and a copy can be secured by addressing The manuscript covers pages and the approximate cost of a typewritten copy will be \$.....

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Some who are in no special hurry for the translation you ask for are waiting to join others in order to secure the reduced rates made possible by

the use of carbon copies. Do you care to join them?

We have no record of the translation of the paper by

In accordance with your request we will keep your application on file.

If the requests for this translation number or more before (date) (no.) others have agreed to share in the cost of having a translation made. Do you care to join them?

Are you willing to translate the paper or see that it is translated on this basis?

..... has agreed to translate this paper and to forward a copy to you.

This scheme of exchanging translations of papers in geology and paleontology is described in *SCIENCE* for April 12, 1918. It is available to all and depends for its success upon your co-operation.

LANCASTER D. BURLING

GEOLOGICAL SURVEY,
OTTAWA, CANADA

SCIENTIFIC BOOKS

Chemical Analyses of Igneous Rocks. Published from 1884 to 1913 inclusive. With a critical discussion of the character and use of analyses. By HENRY STEPHENS WASHINGTON. U. S. Geological Survey, Professional Paper 99, Washington, 1917.

The Quantitative Classification of igneous rocks is one of the many very important contributions which America has made to the science of geology. As is well known it is the product of the labors of four distinguished petrographers—Professor Iddings, Professor Pirsson, Dr. Whitman Cross and Dr. H. S. Washington—and is based on the chemical composition of rocks rather than on their mineralogical character which formed the basis for the various older classifications.

In the earlier years of geological science but little attention was paid to the chemical composition of rocks, except in a very general way. Later when the chemical analysis of rocks came to be more common, the analyses were carried out in a very careless way since the rocks were considered to be merely aggregations of certain minerals the relative proportions of which might vary more or less, and, consequently, the chemical composition

of the whole would be represented with sufficient accuracy even although an error of a per cent. or two in any one or other of the chemical constituents might be made. Now, however, the study of these igneous rocks is regarded as a study of silicate solutions and their equilibria and the subject has thus become a special branch of physical chemistry. Such being the case the accurate chemical analysis of igneous rocks is recognized to be of the greatest importance, and the correct understanding of the composition of these rocks is now seen to have a very far-reaching and important bearing on some of the most fundamental problems of the science.

As the importance of the chemical composition of rocks became increasingly recognized, attempts were made to collect and correlate all published analyses. The most notable of these was that of Justus Roth whose "Tabellen" of rock analyses were published by intervals between 1869 and 1884, and the more recent collection of A. Osann.

The present work by Dr. Henry S. Washington of the Carnegie Institution, Washington, goes far beyond these. Every serial whether published by a Survey, Society, or other organization, which might conceivably contain petrographic material, has been examined. volume by volume, the examination embracing publications from the year 1883 to 1915. As all the analyses of importance published before 1883 had already been collected by Roth and are embraced in the present list—and as Dr. Washington has spared neither time nor effort to include in his paper all analytical material which is worthy of consideration—the present collection of analyses may be said to be complete, perfect and final. To use a colloquial expression the volume under review is "the limit."

The total number of analyses tabulated by Dr. Washington amounts to no less than 8,602, and it is significant of the increased interest taken in rock analysis in recent years to note that in the thirteen years from 1901 to 1913 inclusive, nearly twice as many analyses were published as during the sixteen preceding years between 1884 and 1900. This accounts