FOREIGN LITERATURE ON COAL:
A Guide to Abstracts and Translations

By Mary S. Esfandiary
FOREIGN LITERATURE ON COAL:
A Guide to Abstracts and Translations

By Mary S. Esfandiary

* * * * * * * * * * information circular 8063

UNITED STATES DEPARTMENT OF THE INTERIOR
Stewart L. Udall, Secretary

BUREAU OF MINES
Marling J. Ankeny, Director
This publication has been cataloged as follows:

Esfandiyar, Mary S


1. Coal - Bibliography. 2. Coal - Abstracts. 3. Coal - Translations from foreign languages. I. Title. II. Title: Foreign coal technical literature. (Series)

TN23.U71 no. 8063 622.06173

U.S. Dept. of the Int. Library.
CONTENTS

<table>
<thead>
<tr>
<th>Introduction</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>English-language reports on foreign coal technology</td>
<td>1</td>
</tr>
<tr>
<td>Abstracts</td>
<td>18</td>
</tr>
<tr>
<td>B.C.U.R.A. Monthly Bulletin</td>
<td>18</td>
</tr>
<tr>
<td>Chemical abstracts</td>
<td>19</td>
</tr>
<tr>
<td>Fuel abstracts</td>
<td>19</td>
</tr>
<tr>
<td>Gas abstracts</td>
<td>20</td>
</tr>
<tr>
<td>Polish technical abstracts</td>
<td>20</td>
</tr>
<tr>
<td>U.S.S.R. materials and materials processing equipment</td>
<td>21</td>
</tr>
<tr>
<td>SOV/STEP abstracts</td>
<td>21</td>
</tr>
<tr>
<td>Translations</td>
<td>22</td>
</tr>
<tr>
<td>Cover-to-cover translations of journals</td>
<td>22</td>
</tr>
<tr>
<td>Other ready-made translation sources</td>
<td>25</td>
</tr>
<tr>
<td>Government and general or random source listings</td>
<td>25</td>
</tr>
<tr>
<td>Private and commercial sources</td>
<td>28</td>
</tr>
<tr>
<td>Selected foreign sources</td>
<td>29</td>
</tr>
<tr>
<td>Custom-made translation sources</td>
<td>32</td>
</tr>
<tr>
<td>Some selected typical commercial and other custom-translation sources in the United States</td>
<td>33</td>
</tr>
<tr>
<td>Private or individual translators</td>
<td>36</td>
</tr>
<tr>
<td>Two custom-translation sources abroad</td>
<td>37</td>
</tr>
<tr>
<td>Counterpart fund program</td>
<td>39</td>
</tr>
<tr>
<td>A simple program for maintaining current awareness of foreign technical developments</td>
<td>41</td>
</tr>
<tr>
<td>Requesting a translation</td>
<td>42</td>
</tr>
<tr>
<td>Processing a request</td>
<td>42</td>
</tr>
<tr>
<td>Conclusions and recommendations</td>
<td>45</td>
</tr>
</tbody>
</table>

TABLES

1. Foreign serial publications on coal and general mining technology | 3 |
2. Russian journals available in English translation | 23 |
FOREIGN LITERATURE ON COAL:
A Guide to Abstracts and Translations

by

Mary S. Esfandiary

INTRODUCTION

U.S. scientists attempting to maintain continuous surveillance of scientific information are confronted with two acute problems: The steady, even spectacular, increase in the volume of such information and the fact that much of it is published in unfamiliar foreign languages. According to the National Science Foundation, almost one-third of the world's scientific literature is published in languages that are read by less than 5 percent of U.S. scientists.

Most scientists in the United States must rely on abstract journals and translations to obtain information on developments in research and investigations conducted in the non-English-speaking countries. However, there are problems involved in procuring suitable abstracts and translations and in obtaining such information as cheaply and rapidly as possible.

For some years the Branch of Bituminous Coal Research of the Bureau of Mines has been concerned with the problem of obtaining technical information and translations from foreign-language publications dealing with coal science and technology. Interest in the techniques and sources used by the Branch of Bituminous Coal Research has prompted the preparation of this publication.

As indicated by the title, this guide describes only the sources used to obtain information on foreign coal technology. It is not comprehensive. It has been prepared with the need of the coal scientist in mind but may also prove helpful to others. Publications that provide additional or more detailed information on availability of translations and sources are cited.

ENGLISH-LANGUAGE REPORTS ON FOREIGN COAL TECHNOLOGY

Information, in English, on scientific developments can be obtained from two general sources: (1) Abstracts or summaries of technical publications and (2) translations of papers, complete journals, or books. Interest in obtaining

---

1 Work on manuscript completed September 1960.
2 Chemist, Branch of Bituminous Coal Research, Bureau of Mines, Washington, D.C.
a translation of some foreign publication is generally prompted by a reference to the publication in an English-language source or by an abstract of the material.

There are 63 serial publications originally issued in languages other than English that contain, with some degree of frequency, articles of potential interest to coal technologists on coal reserves, geology, analysis and constitution, mining preparation, combustion, carbonization, gasification, hydrogenation, the Fischer-Tropsch process, health and safety, and other related areas of investigation. Eleven languages are represented: Chinese, Czech, French, German, Hungarian, Italian, Japanese, Polish, Rumanian, Russian, and Spanish. Some of these publications, relatively few, are also published in cover-to-cover English translations. However, most of the serial publications listed are abstracted routinely. Information on a few is not available in English except possibly by custom translation of selected papers. For these serial publications the availability in English of scientific information on foreign coal technology is shown in table 1.

**CODE FOR TABLE 1, COLUMN 7 - AVAILABILITY IN ENGLISH**

1. Abstracts in English incorporated routinely in the foreign publication.


5. Gas Abstracts.


9. Cover-to-cover translations.

10. Unavailable, as far as known, in English abstracts or translations.

11. English translation of table of contents appears in foreign journal.
<table>
<thead>
<tr>
<th>Original language</th>
<th>Title in original language</th>
<th>English equivalent</th>
<th>Addresses of publishers</th>
<th>Frequency of appearance</th>
<th>Subject areas encompassed</th>
<th>Availability in English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese........</td>
<td>Jan Liao Hsueh Pao or Acta Focalia Sinica.</td>
<td>****</td>
<td>****</td>
<td>Quarterly...</td>
<td>Comprehens-ive.</td>
<td>1, 3.</td>
</tr>
<tr>
<td>Mel-K’uung Chi-Shu.</td>
<td>Coal Mining technology.</td>
<td>****</td>
<td>****</td>
<td>Monthly.....</td>
<td>Mining prep- aration.</td>
<td>10.</td>
</tr>
</tbody>
</table>


See footnotes at end of table.
CODE FOR TABLE 1, COLUMN 7 - AVAILABILITY IN ENGLISH

1. Abstracts in English incorporated routinely in the foreign publication.


5. Gas Abstracts.


9. Cover-to-cover translations.

10. Unavailable, as far as known, in English abstracts or translations.

11. English translation of table of contents appears in foreign journal.
<table>
<thead>
<tr>
<th>Original language</th>
<th>Title in original language</th>
<th>English equivalent</th>
<th>Addresses of publishers</th>
<th>Frequency of appearance</th>
<th>Subject areas encompassed</th>
<th>Availability in English</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freiberger Forschungshefte.</td>
<td>----</td>
<td>Academie-Verlag G.m.b.H. Mahrenstr. 39 Berlin W 8</td>
<td>----</td>
<td>----</td>
<td>2, 3, 4.</td>
</tr>
<tr>
<td></td>
<td>Glückauf - Bergmännische Zeitung.</td>
<td>----</td>
<td>Verlag Glückauf G.m.b.H. Huyssenallee 105 Essen</td>
<td>Biweekly.....</td>
<td>Mining, preparation.</td>
<td>2, 3, 4.</td>
</tr>
<tr>
<td></td>
<td>Mitteilungen der Vereinigung der Grosskesselbesitzer.</td>
<td>----</td>
<td>Verlag Stahleisen m.b.H. Breitestr. 27 Postfach 2990 Düsseldorf</td>
<td>Irregular...</td>
<td>Combustion, fuel efficiency.</td>
<td>2, 3, 4.</td>
</tr>
</tbody>
</table>

See footnotes at end of table.
CODE FOR TABLE 1, COLUMN 7 - AVAILABILITY IN ENGLISH

1. Abstracts in English incorporated routinely in the foreign publication.


5. Gas Abstracts.


9. Cover-to-cover translations.

10. Unavailable, as far as known, in English abstracts or translations.

11. English translation of table of contents appears in foreign journal.
<table>
<thead>
<tr>
<th>Original language</th>
<th>Title in original language⁴</th>
<th>English equivalent</th>
<th>Addresses of publishers</th>
<th>Frequency of appearance</th>
<th>Subject areas encompassed⁶</th>
<th>Availability in English</th>
</tr>
</thead>
<tbody>
<tr>
<td>German (con.)...</td>
<td>Zeitschrift der Deutschen Geologischen Gesellschaft.</td>
<td><strong>---</strong></td>
<td>Deutsche Geologische Gesellschaft Wiesenerstr. 72-74 Hanover</td>
<td>Irregular...</td>
<td>Geology, preparation.</td>
<td>3.</td>
</tr>
<tr>
<td>Italian...........</td>
<td>Il Calore - Rassegna tecnica mensile dell' associazione per il controllo della combustione.</td>
<td><strong>---</strong></td>
<td>Instituto Propaganda Internazionale via Tadino 62 Milan</td>
<td>.....do.....</td>
<td>Fuel efficiency.</td>
<td>3, 4.</td>
</tr>
<tr>
<td></td>
<td>La Rivista dei combustibili.</td>
<td><strong>---</strong></td>
<td>Libreria Editrice Politecnica Tamburini via Giovanni Pascoli 55 Milan</td>
<td>.....do.....</td>
<td>Analysis, combustion.</td>
<td>2, 3, 4, 5.</td>
</tr>
<tr>
<td></td>
<td>Shigen Gijutsu Shikenjō Hōkoku.⁴</td>
<td>Reports of the Resources Research Institute</td>
<td>Resources Research Institute Kotobuki-chō Kawaguchiko Saitama-ken</td>
<td>Irregular...</td>
<td>Comprehensive.</td>
<td>1, 3.</td>
</tr>
<tr>
<td></td>
<td>Waseda Daigaku Közangaku Kenkyū Hōkoku.⁶</td>
<td>Bulletin of the Institute of Mining, School of Science and Engineering, Waseda University</td>
<td>Dept. of Mining School of Science and Engineering Waseda University 647 1-chôme Totsuka-machi Shinjuku-ku Tokyo</td>
<td>Monthly.....</td>
<td>Mining, preparation.</td>
<td>3.</td>
</tr>
</tbody>
</table>

See footnotes at end of table.
CODE FOR TABLE 1, COLUMN 7 - AVAILABILITY IN ENGLISH

1. Abstracts in English incorporated routinely in the foreign publication.


5. Gas Abstracts.


9. Cover-to-cover translations.

10. Unavailable, as far as known, in English abstracts or translations.

11. English translation of table of contents appears in foreign journals.
<table>
<thead>
<tr>
<th>Language</th>
<th>Title in original language</th>
<th>English equivalent</th>
<th>Addresses of publishers</th>
<th>Frequency of appearance</th>
<th>Subject areas encompassed</th>
<th>Availability in English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japanese</td>
<td>Tankō Gijutsu...</td>
<td>Coal Mining Engineer.</td>
<td>Hokkaidō Tanko Gijutsu Kita 1 Chōme Nishi 2 Sapporo-shi Sapporo-shi Hokkaido</td>
<td>Monthly...</td>
<td>Mining, preparation.</td>
<td>3.</td>
</tr>
<tr>
<td><strong>----</strong></td>
<td>Coal Preparation Review.</td>
<td>Resources Research Institute of Kagoshima Saitama-ken</td>
<td></td>
<td>Alternate Months.</td>
<td>Preparation.</td>
<td>10.</td>
</tr>
<tr>
<td><strong>----</strong></td>
<td>Journal of the Mining Institute of Hokkaido.</td>
<td>Mining Inst. of Hokkaido Kita 12, Nishi 8 Faculty of Engineering Hokkaido University</td>
<td></td>
<td>Bimonthly...</td>
<td>Mining, preparation.</td>
<td>1, 3, 4.</td>
</tr>
<tr>
<td>Kyūshū Kozan Gakkai-shi.</td>
<td>Journal of the Mining Institute of Kyushu.</td>
<td>Kyushu Kozan Gakkai Faculty of Engineering Kyushu University Hakozaki-machi Fukuoka</td>
<td></td>
<td>Monthly...</td>
<td>Mining...</td>
<td>1, 3.</td>
</tr>
<tr>
<td>Tōhoku Kozan.</td>
<td>Journal of the Mining Institute of Tohoku.</td>
<td>Mining Institute of Tohoku Sakurakoji, Sendai-shi Tohoku University</td>
<td></td>
<td>Monthly...</td>
<td>Mining, preparation.</td>
<td>1, 3, 4.</td>
</tr>
</tbody>
</table>

See footnotes at end of table.
CODE FOR TABLE 1, COLUMN 7 - AVAILABILITY IN ENGLISH

1. Abstracts in English incorporated routinely in the foreign publication.


5. Gas Abstracts.


9. Cover-to-cover translations.

10. Unavailable, as far as known, in English abstracts or translations.

11. English translation of table of contents appears in foreign journal.
<table>
<thead>
<tr>
<th>Original language</th>
<th>Title in original language</th>
<th>English equivalent</th>
<th>Addresses of publishers</th>
<th>Frequency of appearance</th>
<th>Subject areas encompassed</th>
<th>Availability in English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japanese&lt;sup&gt;a&lt;/sup&gt; (con.)</td>
<td>----</td>
<td>Journal of Suiyokai.</td>
<td>Suiyokai Yoshida-honcho Sakyoku, Kyotoshi Faculty of Engineering Kyoto University</td>
<td>Alternate months.</td>
<td>Mining, preparation.</td>
<td>3.</td>
</tr>
<tr>
<td></td>
<td>----</td>
<td>Mining and Safety.</td>
<td>Resources Research Institute Kawaguchi-shi Saitama-ken</td>
<td>Monthly.....</td>
<td>Mining, health, and safety.</td>
<td>10.</td>
</tr>
<tr>
<td></td>
<td>----</td>
<td>Report of the Scientific Research Institute Komagome-Fujimaecho Bunkyo-ku Tokyo</td>
<td>\ldots..do.....</td>
<td>Utilization, gasification.</td>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>Tanken&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Journal of the Coal Research Institute</td>
<td>\ldots..do.....</td>
<td>Analysis, geology, petrography, preparation, carbonization, gasification.</td>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polish</td>
<td>Archiwum Górnicz.</td>
<td>Mining Archives.</td>
<td>ul. Miodowa 10 Warsaw or Polska Akademia Nauk Komitet Górniczta Kraków</td>
<td>Quarterly....</td>
<td>Mining....</td>
<td>2, 3, 8.</td>
</tr>
<tr>
<td></td>
<td>Energetyka Przemysłowa Gospodarka Clepina.</td>
<td>Industrial Power and Heat Engineering.</td>
<td>ul. Mickiewicz 18 Warsaw</td>
<td>Bimonthly...</td>
<td>Boiler water and fuel efficiency; instrument design.</td>
<td>8.</td>
</tr>
<tr>
<td></td>
<td>Koks-Smola-Gaz...</td>
<td>Coke, Tar, Gas.</td>
<td>ul. Stawowa 19 Stalinogródt</td>
<td>Monthly.....</td>
<td>Comprehensive.</td>
<td>1, 2, 3, 4.</td>
</tr>
</tbody>
</table>

See footnotes at end of table.
CODE FOR TABLE 1, COLUMN 7 - AVAILABILITY IN ENGLISH

1. Abstracts in English incorporated routinely in the foreign publication.


5. Gas Abstracts.


9. Cover-to-cover translations.

10. Unavailable, as far as known, in English abstracts or translations.

11. English translation of table of contents appears in foreign journal.
<table>
<thead>
<tr>
<th>Original language (1)</th>
<th>Title in original language (2)</th>
<th>English equivalent (3)</th>
<th>Addresses of publishers (4)</th>
<th>Frequency of appearance (5)</th>
<th>Subject areas encompassed (6)</th>
<th>Availability in English (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rumanian........</td>
<td>Studii Si Ceretari de Energetica.</td>
<td>----</td>
<td>Academia Republicii Populare Romine Institut de Energetica Sectia Documentare Sos. Vitan nr. 142 Bucharest</td>
<td>Quarterly...</td>
<td>Carbonization, combustion.</td>
<td>2.</td>
</tr>
<tr>
<td>Spanish........</td>
<td>Combustibles - Publicación del Instituto Nacional del Combustible.</td>
<td>----</td>
<td>Associatieti Scientifica a Inginieri-lor si Tehanicienilor Calea Victoriei 11B Bucharest</td>
<td>Monthly...</td>
<td>Mining, briquetting, carbonization, geology, health and safety.</td>
<td>1, 3.</td>
</tr>
</tbody>
</table>

See footnotes at end of table.
CCDE FOR TABLE 1, COLUMN 7 - AVAILABILITY IN ENGLISH

1. Abstracts in English incorporated routinely in the foreign publication.


5. Gas Abstracts.


9. Cover-to-cover translations.

10. Unavailable, as far as known, in English abstracts or translations.

11. English translation of table of contents appears in foreign journal.
<table>
<thead>
<tr>
<th>Original language</th>
<th>Title in original language</th>
<th>English equivalent</th>
<th>Addresses of publishers</th>
<th>Frequency of appearance</th>
<th>Subject areas encompassed</th>
<th>Availability in English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russian (con.)...</td>
<td>Otdel. Geologii.</td>
<td>Geology Section.</td>
<td>----</td>
<td>----</td>
<td>Geology, reserves.</td>
<td>4, 9</td>
</tr>
<tr>
<td></td>
<td>Otdel. Khim-</td>
<td>Chemical Technology Section.</td>
<td>----</td>
<td>----</td>
<td>Comprehensive.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ishesko Tekhnologii.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Otdel. Khimicheskikh Nauk</td>
<td>Division of Chemical Sciences.</td>
<td>----</td>
<td>----</td>
<td></td>
<td>2, 5, 7</td>
</tr>
<tr>
<td></td>
<td>Khimiya i Tekhnologiya Topliva i Masel.</td>
<td>Chemistry and Technology of Fuels and Oils.</td>
<td>Gosudarstvennoe Izdatel'stvo Neftyanoi i Gorno-Toplivnoi Literature Moscow</td>
<td>Monthly.....</td>
<td>Comprehensive.</td>
<td>2, 3, 4, 5, 6, 7</td>
</tr>
<tr>
<td></td>
<td>Koks i Khimiya...</td>
<td>Coke and Chemistry.</td>
<td>Gosudarstvennoe Izdatel'stvo Literature po Metalurgii Moscow</td>
<td>.....do.....</td>
<td>Carbonization, gasification, hydrogenation.</td>
<td>2, 3, 4, 6, 7, 9</td>
</tr>
<tr>
<td></td>
<td>Metallurg........</td>
<td>Metallurgist.</td>
<td>Ministerstvo Chernoi Metallurgii S.S.S.R. Moscow</td>
<td>.....do.....</td>
<td>Carbonization (occasional items).</td>
<td>3, 4, 6, 7, 9</td>
</tr>
<tr>
<td></td>
<td>Obogashchenie i Briketirovanie Ugley.</td>
<td>Coal preparation and briquetting.</td>
<td>Instytut Obogashchenie i Brikeritovalnie Ugley Ugletekhizdat Moscow</td>
<td>Bimonthly...</td>
<td>Preparation, briquetting.</td>
<td>10.</td>
</tr>
</tbody>
</table>

See footnotes at the end of the table.
CODE FOR TABLE 1, COLUMN 7 - AVAILABILITY IN ENGLISH

1. Abstracts in English incorporated routinely in the foreign publication.


5. Gas Abstracts.


9. Cover-to-cover translations.

10. Unavailable, as far as known, in English abstracts or translations.

11. English translation of table of contents appears in foreign journal.
<table>
<thead>
<tr>
<th>Original language</th>
<th>Title in original language</th>
<th>English equivalent</th>
<th>Addresses of publishers</th>
<th>Frequency of appearance</th>
<th>Subject areas encompassed</th>
<th>Availability in English</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ugol..............</td>
<td>Coal.....</td>
<td>Gosudarstvennoe Nauchno-Tekhnicheskoe Izdatel'stvo Literatury Ugol'noi Promyshlennosti Moscow</td>
<td>.....do.....</td>
<td>Mining, preparation, transportation.</td>
<td>3, 4, 6.</td>
</tr>
<tr>
<td>Zavodskaya Laboratoriy.</td>
<td>Factory Laboratory.</td>
<td>Gosudarstvennoe Izdatel'stvo Literatury po Metalurgii Moscow</td>
<td>.....do.....</td>
<td>Occasional items in all fields.</td>
<td>2, 3, 4, 9.</td>
<td></td>
</tr>
</tbody>
</table>

1 Transliterated, where necessary.
2 "Comprehensive" includes mining, preparation, carbonization, combustion, gasification, hydrogenation, the Fischer-Tropsch process, and health and safety.
3 Excluding irregular or annual publications.
4 Major reference of continuing interest.
5 Regular publication of occasional or potential interest.
Correct the second sentence to read:


B.C.U.R.A. Monthly Bulletin

This bulletin is issued monthly by the British Coal Utilization Research Association as a service to its members and is available by subscription to other "persons, institutions and commercial undertakings...deemed to have a bona fide interest in coal utilization research." 3

Each issue of the bulletin contains approximately 150 indicative abstracts of English and foreign-language publications, arranged under nine major headings: Fuels - sources and characteristics; coal preparation and handling; carbonization and gasification; heat generation and utilization; waste products and corrosion; conversion of coal to special products; plant engineering; general science; and general. Each of these major headings, in turn, is subdivided into a number of groups. For example, carbonization and gasification would include abstracts under nine additional groups, covering among other topics high-temperature carbonization, gasification plant and processes, underground gasification, coke, and gas.

There is a timelag of at least 3 months between publication of an original paper and the appearance of an abstract in the B.C.U.R.A. Monthly Bulletin. Occasionally, abstracts published originally elsewhere, as for example, Chemical Abstracts or SOV/STEP Abstracts issued by the Office of Technical Services of the Department of Commerce (OTS), are digested or cited in the B.C.U.R.A. Monthly Bulletin.

The B.C.U.R.A. Monthly Bulletin includes, as an important regular feature, special reviews of technical or related topics. These reviews, 3 to 50 pages long, are concerned with a diversity of subjects; for example, determination of moisture in coal (issue No. 3, Part II, February-March 1960, pp. 117-137) or the cyclone furnace (issue No. 5, Part II, April-May 1960, pp. 205-254). Each review includes a comprehensive bibliography.

Subscriptions to the Bulletin are available for approximately $15 per annum from the Liaison and Publications Officer, B.C.U.R.A., Randalls Road, Leatherhead, Surrey, England.

3 Quoted descriptions are from the literature of the organization.
Abstracts

As shown in table 1, a few of the journals of interest to the coal scientist are translated in their entirety, and most of the others are abstracted. There are seven major abstract sources readily available to coal scientists and others: B.C.U.R.A. Monthly Bulletin, Chemical Abstracts, U.S.S.R. Materials and Materials Processing Equipment, and the SOV/STEP Abstracts. Each of these secondary sources is considered in the following paragraphs. (See attached substitution)

B.C.U.R.A. Monthly Bulletin

This bulletin is issued monthly by the British Coal Utilization Research Association as a service to its members and is available by subscription to other "persons, institutions and commercial undertakings...deemed to have a bona fide interest in coal utilization research."^3

Each issue of the bulletin contains approximately 150 indicative abstracts of English and foreign-language publications, arranged under nine major headings: Fuels - sources and characteristics; coal preparation and handling; carbonization and gasification; heat generation and utilization; waste products and corrosion; conversion of coal to special products; plant engineering; general science; and general. Each of these major headings, in turn, is subdivided into a number of groups. For example, carbonization and gasification would include abstracts under nine additional groups, covering among other topics high-temperature carbonization, gasification plant and processes, underground gasification, coke, and gas.

There is a timelag of at least 3 months between publication of an original paper and the appearance of an abstract in the B.C.U.R.A. Monthly Bulletin. Occasionally, abstracts published originally elsewhere, as for example, Chemical Abstracts or SOV/STEP Abstracts issued by the Office of Technical Services of the Department of Commerce (OTS), are digested or cited in the B.C.U.R.A. Monthly Bulletin.

The B.C.U.R.A. Monthly Bulletin includes, as an important regular feature, special reviews of technical or related topics. These reviews, 3 to 50 pages long, are concerned with a diversity of subjects; for example, determination of moisture in coal (issue No. 3, Part II, February-March 1960, pp. 117-137) or the cyclone furnace (issue No. 5, Part II, April-May 1960, pp. 205-254). Each review includes a comprehensive bibliography.

Subscriptions to the Bulletin are available for approximately $15 per annum from the Liaison and Publications Officer, B.C.U.R.A., Randalls Road, Leatherhead, Surrey, England.

^3 Quoted descriptions are from the literature of the organization.
At the end of the fifth paragraph and before the section on Fuel Abstracts, add:

Engineering Index

Engineering Index contains selected abstracts of publications on all phases of engineering and technology. Sections of the Index that relate to coal include resources and geology, exploration, mining, preparation, transportation, carbonization, gasification, pulverized fuel, and analysis. Industry view.

The publications listed in table 1 (pp. 3-17) that include those abstracted in English by Engineering Index are:

Freiberger Forschungshefte ................ Freiberger Research Papers.
Gas- und Wasserfach ....................... Gas and Water Periodical.
Glückauf ................................. Glückauf.

Hungarian:
Acta Technica Academiae Scientiarum Hungaricae ........................ Hungarian Academy of Sciences.

Italian:
La Termotecnica ........................ Thermostechnics.

Japanese:
Nippon Kagyō Kaishi ........................ Journal of the Mining and Metallurgical Institute of Japan.

Polish:
Archiwum Górniczwa ........................ Mining Archives.

Russian:
Serija Geologicheskaya .................... Coke and Chemistry.
Koks i Khimiya .......................... Metallurgist.
Metallurg ................................. Steel.
Stal .................................. Coal.
Ugol ................................... Factory Laboratory.
Zavodskaya Laboratoriya ................... Journal of Applied Chemistry.
Zhurnal Prikladnoi Khimii .................

Engineering Index is published annually at a price of $75 by Engineering Index, Inc., 345 East 47th Street, New York 17, N.Y. In addition, the company provides an abstract service costing from $12 to $32 a year depending on the subject covered. Abstracts are printed on 3- by 5-inch cards and are distributed weekly to subscribers. The card services specifically relating to coal include: Coal and Other Solid Fuels, Coal Deposits and Geology, Coal Mining, Coal Preparation, Manufactured Gas and Coke, and Pulverized Fuel.

and steam engines, other prime movers, industrial furnaces, space heating, atmospheric pollution, refractories, fundamental science related to fuel technology, analysis, testing, instruments, and others.
Title in original language:  

French:  
Annales des Mines de Belgique ..........  
Annales des Mines ..........................  
Chaleur et Industrie ..........................  
Journal des Usines à Gaz ..........................  
Revue de l'Industrie Minérale ......................  

German:  
Brennstoff-Chemie ............................  
Brennstoff-Wärme-Kraft .....................  
Chemie-Ingenieur-Technik .....................  
Freiberger Forschungshefte ..................  
Gas- und Wasserfach ..........................  
GlÜckauf .....................................  

Hungarian:  
Acta Technica Academiae Scientiarum  
Hungaricae ..................................  

Italian:  
La Termotecnica ...............................  

Japanese:  
Nenryü Kyökaishi .............................  
Nippon Kôgyö Kaishi ...........................  

Polish:  
Archiwum Górnickwa ........................  

Russian:  
Izvestiya Akademii Nauk S.S.S.R. ......  
Serija Geologicheskaya .........................  
Koks i Khimiya ................................  
Metallurg .....................................  
Stal ...........................................  
Ugol ..........................................  
Zavodskaia Laboratoriya .......................  
Zhurnal Prikladnoi Khimii ......................  

English equivalent  

Belgian Mining Annals.  
Mining Annals.  
Heat and Industry.  
Mineral Industry Review.  
Fuel Chemistry.  
Fuel-Heat-Efficiency.  
Chemical Engineering.  
Freiberger Research Papers.  
Gas and Water Periodical.  
GlÜckauf.  
Hungarian Academy of Sciences.  
Thermotechnics.  
Journal of the Mining and Metallurgical Institute of Japan.  
Mining Archives.  
Coke and Chemistry.  
Metallurgist.  
Steel.  
Coal.  
Factory Laboratory.  
Journal of Applied Chemistry.  

Engineering Index is published annually at a price of $75 by Engineering Index, Inc., 345 East 47th Street, New York 17, N. Y. In addition, the company provides an abstract service costing from $12 to $32 a year depending on the subject covered. Abstracts are printed on 3- by 5-inch cards and are distributed weekly to subscribers. The card services specifically relating to coal include: Coal and Other Solid Fuels, Coal Deposits and Geology, Coal Mining, Coal Preparation, Manufactured Gas and Coke, and Pulverized Fuel.

and steam engines, other prime movers, industrial furnaces, space heating, atmospheric pollution, refractories, fundamental science related to fuel technology, analysis, testing, instruments, and others.
Chemical Abstracts

Chemical Abstracts is probably the most widely used single reference and scientific information source in the United States. Although the abstracts incorporated in Chemical Abstracts represent surveillance of more than 8,000 publications issued in more than 50 languages, about half are derived from four major foreign languages: Russian, German, French, and Japanese.

The subject index of Chemical Abstracts indicates that serial publications and books dealing with every aspect of coal research and technology are digested; however, some areas are considered in greater detail. Among the subject categories, in broad or general terms, are coal analysis, carbonization, classification, combustion, gasification, hydrogenation, and preparation.

One of the primary disadvantages of using Chemical Abstracts is the timelag between the original publication of the material and its appearance in abstract form. This interval does not permit a current awareness of new developments, and, therefore, other specialized reference sources are needed. However, the detailed nature of Chemical Abstracts and their comprehensiveness make this source a major retrospective searching tool.

Chemical Abstracts Service, which prepares this serial publication, is located at the Ohio State University, Columbus 10, Ohio. However, Chemical Abstracts is published semimonthly by the American Chemical Society; subscriptions at $925 per year are available from the Business Manager, American Chemical Society, 1155 16th Street, N.W., Washington 6, D.C.

Lists of the periodicals abstracted by Chemical Abstracts, including information on publishers' addresses, location of periodicals and availability of copying facilities, are also available from the Washington office of the American Chemical Society. They are List of Periodicals Abstracted by Chemical Abstracts With Key to Library Files and Other Information, 1956, 314 pp., $5; 1957 Supplement, 27 pp., $1; 1958 Supplement, 40 pp., $1.50; and 1959 Supplement, 31 pp., $1.50.

(see attached addenda above)

Fuel Abstracts

The primary objective of Fuel Abstracts and Current Titles is to facilitate "current awareness of the scientific and technical literature on fuel and power by providing a monthly summary of world literature." All aspects of fuel and power covered in the suspended edition of Fuel Abstracts of the Department of Science and Industrial Research (DSIR) are included in the new publication by the same name, which appeared in May 1960. The subject areas of this publication include mining, sources and properties, preparation, manufactured solid fuels and carbon products, carbonization, gasification, gaseous fuels (properties and treatment), byproducts of carbonization and gasification, natural liquid fuels and lubricants (sources, properties, and treatments), synthetic fuels, electricity and electric power, steam raising and steam engines, other prime movers, industrial furnaces, space heating, atmospheric pollution, refractories, fundamental science related to fuel technology, analysis, testing, instruments, and others.
Most of the serial publications listed in table 1 are abstracted. Many other foreign journals and publications that are not cited in table 1 but contain material related to various aspects of coal or fuel technology are also digested and covered by Fuel Abstracts. For example, abstracts of publications on metallurgy, metals, ceramics, and even abstracts of theses from foreign universities are included regularly.

Fuel Abstracts is published by The Institute of Fuel, 18 Devonshire Street, Portland Place, London, W. 1, England. Subscriptions at $36.00 per year, including index and postage, are available from the Institute.

Gas Abstracts

Gas Abstracts contains abstracts of selected materials which originally appeared in some of the journals listed in table 1 and to a larger extent in other, primarily English-language, sources. The papers and patents selected reflect the interests of the gas industry. Most of the material is current; generally, the abstracts cover publications issued during the preceding month.

The subject areas that would be of interest to coal scientists or technologists and that are incorporated routinely in this publication include energy supply and economics (resources, reserves, and competitive applications of fossil fuels and other sources of energy); manufactured gas and chemical processing (gasification of coal and oil; reformed gas, chemical treatment by products, synthesis gas production and conversion, and catalyst and catalyst development); gas fuel utilization and appliances (burners, combustion research and air pollution); equipment and instrumentation, analytical methods and tests, and basic science (chemistry and physics and engineering related to gas technology).

Gas Abstracts is published monthly by the Institute of Gas Technology, 17 W. 34th Street, Chicago 16, Ill. Subscriptions at $18.00 per year to U.S. addresses are available from the Institute.

Polish Technical Abstracts

Polish Technical Abstracts, a quarterly published in both English and Russian, is one of the more convenient tools for continuous surveillance of technical publications that have been published in Polish. The abstracts are confined exclusively to articles, books, and pamphlets published in Poland.

General areas of interest include mining, metallurgy, mechanics and machine construction, electrotechnics and power, chemistry and chemical technology, transport and communication, and miscellaneous items.

Subscriptions are available from the publisher of the abstracts, Centralny Instytut Dokumentacji Naukowo-Technicznej, Aleja Niepodleglosci 188, Warsaw. Photocopies or microfilms of documents included in Polish Technical Abstracts are also available from the publisher.
U.S.S.R. Materials and Materials Processing Equipment

U.S.S.R. Materials and Materials Processing Equipment, published monthly, is prepared by the Foreign Documents Division of the Central Intelligence Agency and "presents unevaluated information selected from Russian-language publications as indicated. It is produced and disseminated as an aid to U.S. Government research."

This publication contains selected materials on chemicals, chemical industry, and chemical equipment or machinery; petroleum and gas industries (including reserves, new construction equipment, and operations); coal, peat, and shale (including information on reserves, construction, new machinery, production and technology); metallurgy (ferrous and nonferrous) and metallurgical equipment; and, on occasion, other special material.

A variety of news items related to the above topics, culled from the various Pravda and other similar publications, are included routinely. Some of the digests in this publication are detailed, at times totaling eight pages or more, and represent what appears to be almost a full-scale translation of the original material.

Subscriptions, as such, are not available; each issue is individually priced. However, the U.S. Department of Commerce, Office of Technical Services (OTS), Washington 25, D.C., fills orders for these issues and will supply price quotations on request.

SOV/STEP Abstracts

One primary advantage of SOV/STEP Abstracts (Soviet Scientific and Technical Exploitation Program Abstracts) is that this publication is printed on card stock, two 5- by 8-inch cards to a sheet, and, therefore, can be used readily for reference filing. However, complete coverage of a journal issue - abstracting of all articles appearing in any of the serial publications included in this program - is not necessarily secured. As of spring 1960, the SOV/STEP program began selective rather than complete abstracting of serial publications.

More than 100 journals, all Russian-language publications, are covered by this service. Subject areas comprise chemistry and chemical engineering, fuel and power, mining and metallurgy, and general science and technology. Subscriptions are modest in cost. The following magazines are included in this service:


Izvestiya-Akademi Nauk S.S.S.R., Otdelenyiye Khimicheskikh Nauk (News of the Academy of Sciences of the U.S.S.R., Division of Chemical Sciences), monthly, identified as PB 141055 T, 70¢ per issue, $4 for six issues.
Khimiya i Tekhnologiya Topliva i Masel (Chemistry and Technology of Fuels and Oils), monthly, PB 141060T, 50¢ per issue, $3 for six issues.

Koks i Khimiya (Coke and Chemistry), monthly, PB 141063T, 50¢ per issue, $3 for six issues.

Metallurg (Metallurgist), monthly, PB 141132T, 60¢ per issue, $3.50 for six issues.

Stal (Steel), monthly, PB 141136T, 70¢ per issue, $4 for six issues.

Zhurnal Prikladnoi Khimii (Journal of Applied Chemistry), monthly, PB 141076T, 90¢ per issue, $5 for six issues.

Single issues or subscriptions to these journals are available, as indicated, from the U.S. Department of Commerce, Office of Technical Services (OTS), Washington 25, D.C.

TRANSLATIONS

Technical publications originally published in foreign languages and available in English can be divided into two broad categories: (1) Cover-to-cover translations of journals and (2) special translations.

Cover-to-Cover Translations of Journals

Although a large variety and number of foreign serial publications are available in English translation on a regular basis, relatively few of the journals that are of interest to the coal scientist are included in this category. Complete lists of and information on the Russian publications that are now being published regularly in English translation are available from various sources, such as the National Science Foundation (NSF), Office of Scientific Information, Washington 25, D.C.; the Department of Scientific and Industrial Research, Lending Library Unit (DSIR-LLU), 20 Chester Terrace, London, N.W. 1, England; and the European Productivity Agency, Specialized Information Section, 2 rue André Pascal, Paris 16e, France.

Some of the Russian journals available in English translation which contain frequently or occasionally material of interest to coal scientists are listed in table 2. More than 80 journals are now translated in their entirety.
<table>
<thead>
<tr>
<th>Original title</th>
<th>English equivalent</th>
<th>Frequency</th>
<th>Translation beginning</th>
<th>Publisher</th>
<th>Annual subscription rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biulleten Izobretenii...</td>
<td>U.S.S.R. patents and inventions. (Also available in 17 separate sections including chemistry and chemical engineering, fuel, furnaces, and prime movers, metallurgy, mining.)</td>
<td>Monthly</td>
<td>January 1959</td>
<td>Pergamon...</td>
<td>$80</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sciences (American Geological Institute).</td>
<td></td>
</tr>
<tr>
<td>Otdel. Khimicheskoi Tekhnologii.</td>
<td>Chemical Technology Section.</td>
<td></td>
<td>1956</td>
<td>Consultants Bureau.</td>
<td>15</td>
</tr>
<tr>
<td>Otdel. Kimili----------</td>
<td>Chemistry Section.</td>
<td></td>
<td>1958</td>
<td></td>
<td>110</td>
</tr>
<tr>
<td>Otdeleniye Khimicheskikh Nauk.</td>
<td>Division of Chemical Sciences.</td>
<td></td>
<td>Nov. 1, 1952</td>
<td>Consultants Bureau.</td>
<td>45</td>
</tr>
<tr>
<td>Metallurgi...................</td>
<td>Metallurgist.</td>
<td></td>
<td>Nov. 1, 1957</td>
<td>Acta Metallurgica...</td>
<td></td>
</tr>
<tr>
<td>Stal........................................</td>
<td>Steel.</td>
<td></td>
<td>January 1959</td>
<td>Iron and Steel Institute.</td>
<td>58</td>
</tr>
<tr>
<td>Zavodskaja Laboratoriya.</td>
<td>Industrial Laboratory.</td>
<td></td>
<td>(R³) vol. 24, No. 1, 1958</td>
<td>Instrument Society of America.</td>
<td>35</td>
</tr>
</tbody>
</table>

See footnotes at end of table.
<table>
<thead>
<tr>
<th>Original title</th>
<th>English equivalent</th>
<th>Frequency</th>
<th>Translation beginning</th>
<th>Publisher</th>
<th>Annual subscription ratea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zhurnal Prikladnoi Khimii.</td>
<td>Journal of Applied Chemistry.</td>
<td>....do....</td>
<td>Vol 23, No. 1, January 1950.</td>
<td></td>
<td>60 20</td>
</tr>
</tbody>
</table>

1 Addresses of publishers:
Acta Metallurgica, see Pergamon Institute.
Consultants Bureau, Inc., 227 West 17th Street, New York 11, N.Y.
Instrument Society of America, 313 Sixth Avenue, Pittsburgh 22, Penn.
Pergamon Institute, 122 East 55th Street, New York 22, N.Y.

2 Subscription information drawn from sources other than Library of Congress list; for example, National Science Foundation publications, upper figures refer to general subscription, and lower figures refer to rates for libraries of academic institutions.

3 (R) = volume and number of Russian journal.

4 Assumed figure.

Other Readymade Translation Sources

There is an enormous and steadily growing pool of publications (papers, journals, articles, books, and reports of all types) translated from various languages by and for numerous Government and private agencies, both here and abroad. The following paragraphs outline some of the tools the coal scientist can use to keep himself informed on translated material as it becomes available. The section at the end of this report attempts to show how the coal scientist can add systematically to this wealth of material.

There are three major, general types of sources of readymade translations that should be kept in mind and watched. These consist of published lists of translations issued by (1) Government and general or random source listings, (2) private and commercial sources, and (3) selected foreign sources.

There are literally dozens of sources that could be checked profitably. However, most, if not all, of the material that is available from each of these sources is finally integrated into a comparatively small number of centralized pools.

Because this publication is intended to be a simple, workable guide for the coal scientist who is trying to retrieve and search for information on foreign technology, the many unit organizations and sources that provide only sporadic items of interest will not be discussed. Individuals who desire more detailed source information can consult other, more comprehensive listings.4

Only the major sources in each of the three limited, previously outlined categories will be considered in the following papers.

Government and General or Random Source Listings

In recent years, Federal agencies have been cooperating in developing an organized central translation pool. The U.S. Department of Commerce, Office of Technical Services (OTS), Washington 25, D.C., is the central depository for translations from all Government sources.

The Translation Center of the Special Libraries Association (SLA) at the John Crerar Library, 86 East Randolph Street, Chicago 1, Ill., which was formerly a general depository for translations from all sources, now specializes in and is responsible for collecting translations from non-Government sources, both domestic and foreign.

Both of these organizations, OTS and SLA, cooperate in preparing Technical Translations, a semimonthly publication.

Technical Translations

This publication lists and, when possible, includes abstracts of translated technical literature that is available from OTS, SLA, the Library of Congress, cooperating foreign governments, commercial translators and publishers, universities, and other sources.

The translations reported in each issue are arranged under various categories that include chemistry, engineering, machinery (fabrication and accessory equipment), materials, mechanics, metallurgy, physics, and research methods, techniques, and equipment. Each of these categories, in turn, is further subdivided into appropriate groups. For example, materials includes sections on ceramics and refractories, fuels, lubricants, and hydraulic fluids. Material originally published in various foreign languages is included.

Technical Translations also includes book reviews, bibliographic notices of books for which information on coverage and tables of contents are available, listings of translations in process and of new periodicals that have been scheduled for cover-to-cover translation, and appropriate indexes. Cumulative indexes of Technical Translations issued in 1959 have been published and are available. Volume 1 covers the period from January to June 1959, and volume 2 covers the period from July to December 1959. These volumes contain indexes by author, subject, journal, and translation number and, hence, can be used readily for checking the availability of a translation. The basic list of all periodicals translated from cover-to-cover appears in the first issue of each volume.

Instructions for ordering the translations listed are given in the publication. Each entry has a symbol that stands for the name of the agency from which the translation can be obtained. The order number of the translation, if appropriate, and the cost of the translation, if available, are also given. Organizations in the United States, England, Canada, Australia, and other countries are cited as sources for translations. Complete mailing addresses are also given for depository libraries which have collections of selected documents which can be examined by the public.

Subscriptions to Technical Translations are available for $12 per year in the United States and for $16 per year elsewhere from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.

Consolidated Translation Survey

The Consolidated Translation Survey (CTS), prepared monthly by the Foreign Documents Division of the Central Intelligence Agency (CIA), lists translations prepared by, acquired by, or obtainable from various Government agencies, private industry, universities, research institutions, and commercial translation services. Many, possibly all, of the translations listed in CTS appear also subsequently in Technical Translations of OTS. One of the principal advantages of CTS is the reduced timelag in reporting the availability of new translations. An effort has been made to keep the listings current. As
noted in the preface of this publication, the CTS "is a compilation of foreign documentary projects, completed or started during the month preceding this publication."

Translations are listed by geographic area and by subject category. The areas covered include the U.S.S.R., Eastern Europe, Northern Europe, Near East, Africa, Far East, Western Europe, Latin America, and others; thus, translations from various foreign-language sources are represented. The area translations are concerned with economic, political, military, geographic, sociological, and biographic developments.

All of the scientific material is grouped together in one separate section, regardless of the geographic area. The scientific section, in turn, is subdivided into about 20 categories including, for example, chemistry, engineering, and fuels.

Each entry includes the title in English, author, foreign language title of source material, publication date and other data, status of the translation project, and availability. Requests for copies of translations must be directed to the designated producing organization. To facilitate such acquisition, the CTS includes a list of abbreviations representing producing and distributing organizations and their addresses.

An author index is included in each issue. In addition, cover-to-cover translations received during the month indicated on the cover of each issue are listed in the publication.

Regular subscriptions to CTS are not available. Copies are distributed by OTS. Each issue varies in price. To obtain copies of this publication, an inquiry should be made and, subsequently, an appropriate order should be placed with the Office of Technical Services, Department of Commerce, Washington 25, D.C.

Defense and Other Federal Agency Listings

A number of Federal agencies have translation programs adapted to the specific needs of their research staff and other personnel. As was indicated earlier, copies of all of the translations completed or obtained by Federal organizations are deposited with or eventually noted by OTS. However, because of the organizational needs and because there is frequently a timelag of 8 months or more between the appearance and availability of a translation and its listing in Technical Translations, many agencies prepare and issue individual translation lists of their own, which are more up to date.

These lists vary in scope and frequency of distribution or availability. For example, the translation list prepared by the Atomic Energy Commission (AEC), Office of Technical Information Extension, P.O. Box 62, Oak Ridge, Tenn., is a regular publication, covering translations that are either in process or were recently completed and that are of interest to atomic scientists. These lists are designed primarily for internal use.
However, all completed translations are abstracted and indexed in Nuclear Science Abstracts, which is published semimonthly by the AEC and available on subscription for $18 per annum in United States and for $22.50 per annum to foreign addresses from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. Copies of all translations are reproduced for official AEC distribution, including distribution to depository libraries in the United States and abroad. Other organizations and the public can obtain these translations either in printed form from OTS or in photostat or microfilm form from the Library of Congress and the John Crerar Library.

The Bureau of Mines also prepares similar lists of completed or acquired translations at irregular intervals. The translations listed deal with various aspects of coal research and technology and related topics. The lists of translations are compiled and issued by the library of the Pittsburgh Coal Research Center for the use of Bureau scientists. However, copies are made available to other U.S. and foreign organizations that have expressed interest in the exchange of lists and translations. List of Accessions, published monthly by the Central Library of the U.S. Department of the Interior, Washington 25, D.C., also includes listings of translations available in the Department. The availability of each translation acquired by the Bureau of Mines or the Department as a whole is also recorded in Consolidated Translation Survey of CIA and in Technical Translations of OTS.

The great number of translation lists issued both here and abroad dictate the need for extreme selectivity. Except for a few instances, the Consolidated Translation Survey and Technical Translations will serve the general scientific community. The coal scientist and most specialists will derive little or no advantage from continuous surveillance of separate lists issued by other Federal agencies.

Private and Commercial Sources

Three commercial organizations in the United States, Associated Technical Services, Inc., Consultants Bureau, Inc., and Henry Brutcher, regularly compile lists of translations and produce polished translations of interest to the coal scientist.

Both Associated Technical Services, Inc. (ATS), and Henry Brutcher (HB) issue lists of translations from various languages. These translations can be procured at designated prices.

From the standpoint of volume, Consultants Bureau, Inc. (CB), is probably the major private translating organization in the United States. It has a large scope of activity and translates many journals from cover-to-cover.

Readymade translations available from each of these three organizations are listed in Technical Translations of OTS and in Consolidated Translation Survey of CIA. The listings also include identification and cost of translation, if known, as well as the appropriate address for the issuing organization.
Selected Foreign Sources

The term "foreign sources" as used here refers only to organizations in English-speaking countries that regularly produce, sell, or otherwise make available translations of interest to coal scientists. Two such organizations are in Australia, six in England, and one in India. These nine organizations will be discussed briefly in the following paragraphs.

Australia

Two Australian organizations regularly process translations of interest to Bureau of Mines coal scientists and make complimentary copies available to this organization. They are the Commonwealth Scientific and Industrial Research Organization (CSIRO), 314 Albert Street, East Melbourne, C. 2., and the University of Melbourne, Faculty of Science, Languages Section, Carlton, N. 2, Victoria.

The translations prepared by or for these organizations are listed in CSIRO Abstracts, a monthly publication of the CSIRO in Australia. Additions to the British Commonwealth Index of Scientific Translations from a variety of sources and in a number of subject areas are also cited.

The availability of any translation obtained from these sources is noted in the list of translations of the Bureau of Mines, and subsequently, in Consolidated Translation Survey of CIA and in Technical Translations of OTS.

England

The British translation program in the field of fuel technology, apart from the cover-to-cover translation of journals, is probably the largest in the English-speaking world. There are a number of organizations that produce and supply excellent translations. Four of the organizations that actually prepare and supply translations of materials that were originally published in Russian, German, French, Polish, and other languages are:

The British Coke Research Association (BCRA).

British Coal Utilization Research Association (BCURA).

The Department of Scientific and Industrial Research - Lending Library Unit (DSIR - LLU).

The National Coal Board (NCB).

Two other organizations do not prepare or process translations but (1) maintain an index of translations available anywhere in Great Britain and its territories, (2) serve as depositories, (3) make copies available to members
or subscribers, and (4) advise the John Crerar Library of new entries or, on occasion, supply copies. They are:

The Association of Special Libraries and Information Bureau (Aslib).

The Science Museum Library (SML).

The single common denominator of all these organizations is the fact that their tremendous pool of translations is so integrated and administered that any English-speaking scientist here or abroad can tap this valuable reservoir quite readily. Detailed descriptions of the organizations are presented in the following paragraphs.

BCRA, Chesterfield, Derbyshire, formerly at 74 Grosvenor Street, London, W. 1, lists its translations in its monthly publication and in its annual report. These translations are available on request.

BCRA cooperates with the Coal Tar Research Association and the DSIR - LLU in translating Koks i Khimiya (Coke and Chemistry), a monthly Russian journal. For information on this cover-to-cover translation of the journal see table 2.

BCURA, Randalls Road, Leatherhead, Surrey, has a comparatively modest translation program. However, each of the 60-odd published translations available from this organization would be of interest to coal scientists. A complete list of the BCURA translation series appears in Bibliography of Publications, 1938-59, a publication of this organization.

Draft translations, prepared for internal use and available on a loan basis, are cited in the organization's monthly Bulletin. A complete list of draft translations is available from BCURA's liaison and publications officer on request.

DSIR - LLU, 20 Chester Terrace, London, N.W. 1, sponsors cover-to-cover translations of 16 Russian periodicals, custom translates current materials, and collects and lends translations produced by the Special Libraries Association's Translation Center at the John Crerar Library and by other organizations. The custom translation service of DSIR - LLU will be described in the section on custom-made translation sources.

Translations available on loan or for purchase from the LLU are listed in the LLU Translations Bulletin, a monthly publication, prepared and issued by the LLU. This publication is available on a subscription basis for approximately $6 per annum from Her Majesty's Stationery Office, P.O. Box 569, London, S.E. 1. It also includes, routinely, digests or translations of articles and publications, many from the U.S.S.R., that are of general but distinct interest to the scientific community.

Two complete sets of DSIR - LLU's M series of translations are deposited in the United States with SLA and OTS and can be ordered from these two organizations.
NCB, Hobart House, Grosvenor Place, London, S.W. 1, has a translation section and various departments which frequently translate materials on fuel technology from a variety of different languages. Although translation lists - Lists of translations requested, not necessarily commissioned - are prepared at irregular intervals, these lists are designed for internal use and, hence, would probably not be made generally available. However, notices of new translations do appear in NCB publications.

At present a copy of each translation prepared by NCB is received by the Bureau of Mines on an exchange basis. These translations are cited in the list of translations issued by the library of the Pittsburgh Coal Research Center, and subsequently are listed in CIA and OTS publications.

Aslib, 3 Belgrave Square, London, S.W. 1, does not prepare or undertake to arrange for translations. However, this organization maintains an index of published and unpublished translations from various foreign languages into English. Over 200 organizations in various parts of the British Commonwealth contribute to this index, which covers more than 30,000 translations.

Copies of translations indexed by Aslib are available on loan or may be purchased by Aslib members only at a nominal cost essentially consisting of reproduction fees. Queries on the possible existence of a translation, before a new translation is commissioned, are welcome. Subscription rates for corporate membership are about $20 for a nonprofitmaking organization and $50 for commercial and industrial organizations.

In the past, Aslib has made some of its holdings available to the John Crerar Library and, in addition, has advised the library of any new entries in their index. The National Research Council of Canada, Sussex Drive, Ottawa 2, also maintains a copy of the British Commonwealth index to translations, supplemented by entries for U.S. commercial translations. Availability of translations from the National Research Council of Canada is indicated in Technical Translations of OTS.

SML, South Kensington, London, S.W. 7, like Aslib, does not undertake or commission original translations. However, it serves as a depository and makes photocopies of its holdings - a variety of foreign-language publications as well as translations. These are available to organizations and individuals overseas.

Photocopies are supplied only in response to applications made on prepaid SML requisitions. Each requisition is valid for up to five sheets of photocopy - up to 10 pages of text depending on size of original article. Requisition forms for overseas use, designated 208 Sc. M., are sold singly or in pads of 20. The completed photocopies are normally sent by surface mail but can be airmailed for an additional fee. Prices of requisitions, about $15 per pad of 20 forms, and extra airmail rates, about $6 per pad of 20 forms, are given in the instructions of the Photocopy Service. Rules and instructions for use of requisition forms are printed on the inside cover of the requisition pads.
India

The Indian National Scientific Documentation Center (INSDOC), Hillside Road, New Delhi 12, frequently translates items in various subject areas such as general science, mathematics, physics, mechanical and electrical engineering, chemistry, technology, metallurgy, ceramics, fuel technology, oil technology, geology, and mining. Availability of translations is reported in the INSDOC List of Current Scientific Literature, a semimonthly publication issued on the 1st and 16th of every month by the INSDOC National Physical Laboratory.

Subscriptions to this list are available from INSDOC at $12 per annum. The prime objective of this publication is "to give to scientific workers in India and neighboring countries advance information...of the tables of contents of leading scientific and technical journals of the world" taken primarily from U.S., British, and other foreign publications. The lists of available translations constitute a minor part of this publication.

Translations listed are available in typewritten copy at a price of 3 rupees (60 cents). However, all translations obtained by the Bureau of Mines have been in the form of microfilm copies. Microfilm rates are 40 cents per strip - up to about 10 pages - and 20 cents for each additional strip. This would bring the total cost of an average translation to about $1 to $2. Tables and graphs are not supplied with the translation proper but are included in the copies of the original papers. Microfilm quality is generally poor, and the translations are difficult to read and process.

Custom-Made Translation Sources

Once a scientist has established a definite interest in obtaining a full-scale translation of a paper and has determined that a translation of the item is not already available, he must rely on a custom translation. Generally, custom translations are appreciably more expensive than readymade translations. They are also more difficult to procure and frequently involve additional or special handling. The major problem in obtaining a custom translation is the selection of a suitable translator or translation source.

There are, literally, hundreds of translators and translating services, each specializing in various subject areas and languages. For example, Translators and Translations Services and Sources,\(^6\) includes a directory of translators.

Selection of a translation service is based on a few basic considerations, such as competence in a specific subject area that will be reflected in a good quality translation, cost, speed with which the translation can be supplied, and, sometimes, the special handling or limitations that may be involved.

The Division of Bituminous Coal of the Bureau of Mines has obtained custom translations from various sources. As a guide to the scientist, a few of the sources used most frequently by the Division in its modest translation program will be described briefly. For convenience, the sources will be grouped in the following categories: United States, foreign, and Counterpart Fund Program.

Some Selected Typical Commercial and Other Custom-Translation Sources in the United States

In most cases, translation services are preferred that handle a large volume of technical work and, hence, have facilities for producing, with a minimum delay, polished and complete translations that include tables and illustrations at the lowest possible cost.

Some of the organizations that have been mentioned previously and others that have been used by the Division of Bituminous Coal will be described briefly in the following paragraphs. As indicated earlier, the organizations listed are representative of the variety of services that are available, and the listings should not be interpreted in any way as endorsements of any of these facilities. They are arranged alphabetically, and wherever possible published descriptions issued by these organizations of their services have been used.

1. Associated Technical Services, Inc.
   Mailing Address: P.O. Box 271
   East Orange, N.J.

   Main Office: 855 Bloomfield Avenue
   Glen Ridge, N.J.

ATS reports facilities for translations from German, French, Italian, Spanish, Russian, Polish, Hungarian, Japanese, Chinese, and more than a dozen others. Subjects cover various aspects of science and technology, with special emphasis on all branches of chemistry and physics, mathematics, geology, metallurgy, and engineering.

Rates vary, depending on language. For the languages cited, the basic rates per 1,000 words of English are as follows:

<table>
<thead>
<tr>
<th>Language</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>German, French</td>
<td>$18</td>
</tr>
<tr>
<td>Italian, Spanish, and Russian</td>
<td>19</td>
</tr>
<tr>
<td>Polish, Hungarian</td>
<td>20</td>
</tr>
<tr>
<td>Japanese, Chinese</td>
<td>29</td>
</tr>
</tbody>
</table>

1 A special rate of $16 per 1,000 words of English is charged for Russian technical articles, monographs, and patents - if a translation is ordered within 5 years of the publication date.
This cost is reflected in the original or first copy of any translation ordered. Additional copies are supplied to the purchaser and other interested parties at fractional cost. "Private, confidential or in any way restricted technical material is translated for the client's exclusive use at rates somewhat higher than the basic ones." Otherwise, "ATS retains the right to sell translations of publicly available documents." Additional copies of any ATS custom translation are sold to interested individuals or organizations. As was mentioned previously, completed translations are indexed in Technical Translations of OTS and in the List of Translations issued at frequent intervals by ATS.

2. Henry Brutcher
   P.O. Box 157
   Altadena, Calif.

   Henry Brutcher translates "all languages, except Asiatic and African, at rates ranging from $10 to $20, depending on language and difficulty. Order work is not solicited. Subject area is strictly limited to metallurgy, preferably ferrous." Items translated are listed in a monthly annotated list and catalog of translations issued by the organization and in Technical Translations of OTS.

3. Consultants Custom Translations, Inc.
   227 West 17th Street
   New York 11, N.Y.

   and

   TRANSLATIONS
   130 West 57th Street
   New York 19, N.Y.

   Consultants Custom Translations, Inc., is a department of Consultants Bureau which, as indicated in table 2, translates a number of Soviet scientific journals from cover to cover on a regular basis.

   For a period of almost 15 years, CCT originally processed custom translations from "all languages, in chemistry, engineering, physics, patents," and other subjects at rates ranging from $20 to $30 per 1,000 words on an individual order basis. However, in May 1959, CCT announced that it was suspending its custom translation activities and would, henceforth, devote "full attention to the dissemination of extant translations," and recommended that all future orders be directed to TRANSLATIONS.

   Rates per 1,000 words of English for technical translations made by TRANSLATIONS are as follows:

   Russian, German, French, and Spanish..............$25
   Polish, Italian.................................. 30
   Chinese, Hungarian, and Japanese............... 35
In conjunction with TRANSLATIONS and, eventually, other commercial translation agencies, CCT hopes to provide for the resale of custom translations on an enlarged scale and on the basis of a profit-sharing plan.

Through the Custom Translations Club, members may obtain translations on a profit-sharing basis by agreeing to let the firm resell copies of custom translations made by TRANSLATIONS after two months of availability have elapsed. Members receive royalties of 10 percent on resold copies and may purchase copies of other translations available for resale at a 50-percent reduction. "Members (also) receive monthly bulletins, listing (by subject and title) items available for resale on this basis, as well as immediate notification of other sources of scientific articles available in translation (or already translated) and lists of special translations available at more than a 50 percent discount." At present the club handles only Russian, Czech and Polish translations but in the future may also handle German, French, Japanese, and other translations. There are no dues or fees for membership in the Custom Translations Club.

Consultants Bureau, Inc., issues among other items a number of lists of translations available for sale by the firm, as well as translated tables of contents of Russian journals subsequently translated from cover to cover. CB translations are also cited in Technical Translations of OTS.

4. United States Joint Publications Research Service
   Room 1125
   205 East 42d Street
   New York, N.Y.

   and

   1636 Connecticut Avenue, N.W.
   Second floor
   Washington 6, D.C.

JPRS "is a Federal Government organization established to service the translation and research needs of the various Government departments having an interest in foreign documentary materials, and to prevent, where possible, duplication in processing of such materials. Work requirements are accepted only from U.S. Governmental components, and contracts are placed only with individual linguists who are reimbursed on a per 1,000 words basis for translation. Rates charged and wages paid are not designed to be competitive with those of commercial translation agencies. JPRS handles all languages and all subjects limited only by the nature of work requirements, and the availability of competent linguists."

The translation rates charged by JPRS are comparatively low, about $14 per 1,000 words. However, photostatic or other copies of the items to be translated must be supplied by the agency requesting the translation and a separate purchase order must be processed for each single item to be translated. The time involved in the acquisition of a completed translation varies appreciably.
JPRS does not issue catalogs, lists of translations, or brochures of any kind. Copies of all JPRS scientific, technical, and economic material are deposited with and can be purchased from OTS. JPRS translations are indexed in Technical Translations of OTS.

5. Royer and Roger, Inc.
   Research Servicing Associates
   1000 Vermont Avenue, N.W.
   Washington 5, D.C.

and

Royer and Roger, Inc.
41 East 28th Street
New York 16, N.Y.

Royer and Roger's International Division in Washington and main office in New York maintain facilities for translating Russian, French, German, Italian, Polish, Chinese, and Japanese publications. Subject areas covered include geology, mining, chemistry, physics, mathematics, metallurgy, engineering, and other varied aspects of science and technology. Rates vary from $15 to $23 per 1,000 words for printed custom translations. Additional charges are made for reproducing illustrations and supplying multiple copies of finished translations. Rates for case-bound book translations, supplied in 500 copies or more, and for cover-to-cover translation of journals range from $10 to $23 per page.

This organization regularly makes cover-to-cover translations from a number of Russian scientific journals, including the Izvestiya Akademii Nauk S.S.S.R., Seriya Geologicheskaya (Bulletin of the Academy of Sciences of the U.S.S.R., Geological Series) and Ogneupory (Refractories). These translations are made for and subsequently made available to the technical community by scientific societies. Subscriptions, as noted in table 2, are available from the sponsoring society.

Royer and Roger does not resell copies of any translations. There are no limitations or restrictions on the distribution or disposition of copies of translations made by this organization. All rights for the distribution of translations are vested with the client. Organizations procuring translations from this source can, therefore, deposit copies with OTS, the John Crerar Library, or other organizations of their choice and, hence, make them available to the general public.

Private or Individual Translators

On the whole the use of an individual translator for technical translations presents immediate disadvantages that may or may not be offset by small but rather specific advantages. Generally, the individual translator does not have facilities for (1) independently obtaining copies of the original material to be translated, (2) reproducing figures and illustrations, and
(3) supplying multiple copies in excess of the 5 to 7 legible copies that can be obtained with any typewriter. Usually, the translator is also limited in the number of foreign languages he masters, and, most important, he usually specializes in one technical area. Most of the time he is locally available and performs specialized and rush jobs. However, his ability to provide a translation within a very short period of time is handicapped by the limitations and the deficiencies inherent in a one-man operation.

On the other hand, there are some advantages in engaging individual translators specializing in difficult languages and technical areas. Translations by these individual translators cost less than those of most commercial translation establishments. The translators are generally selected and employed on the basis of their competence in the subject area of interest to a specific organization. They will cooperate with the purchaser by having translations typed on ditto or plastiplate so that they can be reproduced and distributed freely, without limitations or reservations of any kind. Some translators also furnish ditto or plastiplate, simple graphs and illustrations. Alternatively, individual translators will supply translations of legends and other material accompanying illustrations in advance of a full-scale translation of the paper; thus, processing of illustrations and translation of text can proceed simultaneously.

The Division of Bituminous Coal, like many other organizations, has employed a number of individual translators. Because of the advantages described in the preceding paragraph, the Division has continuously employed translators specializing in Oriental languages - Chinese and Japanese. These translators will submit translations typed on ditto or plastiplate, as requested, at a rate of approximately $18 per 1,000 words. Abstracts are also supplied, at an hourly rate based on the time involved in abstracting and equating this time to the translation potential - the number of words that could be translated in this same period.

Two Custom-Translation Sources Abroad

Lack of familiarity with the scope of general translation efforts abroad prohibits any conjectures on the number and types of services available in foreign countries. It would appear, however, that at least in the United Kingdom the number or organizations and individuals engaged in the translation of technical material equals or exceeds that in the United States.

Generally, from the standpoint of total actual expenditures, the use of translation sources abroad is more economical. However, the timelag between the processing of an order and receipt of the translation is often appreciable. Furthermore, some of the foreign organizations are bound by regulations and procedures that limit their general use by organizations in the United States.

In the following paragraphs the requirements of two different types of foreign organizations that provide translations of technical material will be described briefly.
1. The Department of Scientific and Industrial Research -
   Lending Library Unit (DSIR - LLU)
   20 Chester Terrace
   London, N.W. 1

   The DSIR - LLU will furnish ad hoc translations of recent agricultural,
   medical, and other scientific or technical articles originally published in
   Russian if (1) a translation of the article is not available; (2) the original
   article is accessible; (3) the article is considered by the DSIR - LLU to be
   of sufficient interest; (4) the article is relatively recent, preferably pub-
   lished not more than a year ago; (5) the organization requesting the translation
   will edit it if necessary; and (6) the translation is requested for the organi-
   zation's own use, not for publication.

   The DSIR - LLU requires that a request for each translation be made in
   specified form, covering each of the above points - namely, in addition to
   identifying the item, justifying the translation if the article is more than
   a year old, agreeing to editing a draft if requested to do so, which occurs
   occasionally, and confirming that the final translation is required for per-
   sonal or internal use, not for publication. DSIR - LLU may and sometimes does
   nevertheless decline to undertake a translation that has been requested.

   In the past, DSIR has prepared custom translations only on request from
   two separate organizations. For example, translations requested by one in-
   dividual or organization were considered for processing would be listed in the
   monthly DSIR publication. Subsequently, after receiving a confirmation of
   interest in or an order for any of these translations from some new quarter,
   DSIR - LLU would undertake the custom translation. Depending on the number
   of requests received translation rates for an original translation ranged from
   approximately 50¢ to $2 per page of original Russian article. Additional
   copies were supplied at a flat rate of approximately 15¢ per page of original
   article.

   Under DSIR's present translation scheme, costs are outlined as follows:
   "One copy of each translation will be given free to the organization which edits
   it. Copies of translations will be made generally available when completed
   at prices quoted in the LLU Translations Bulletin. Prices will not exceed two
   shillings and six pence (approximately 30 to 35¢) per page of the Russian
   article." The prices cited in the LLU Translations Bulletin include delivery
   anywhere by surface mail. The availability and scope of this monthly DSIR
   publication are described on page 52 of this report.

   The DSIR - LLU maintains two translation services, indicated by prefixes
   to translation numbers, RTS and M. Two complete sets of M series are or will
   be deposited in the United States - one with the John Crerar Library and the
   other with OTS where copies of these translations can be obtained according
   to established procedures. Although copies of some RTS translations, which
   represent the bulk of the DSIR - LLU's current translation effort, have also been
   deposited with OTS and the John Crerar Library, most of the items in this
   series can only be procured from England.
The principal advantage of the DSIR - LLU's Russian translation program is the low price charged for a product of good quality. The main disadvantages or deterrents are the timelag, the possibility that a translation may be declined, and the probability that the requesting organization will be called upon to edit at least some of the drafts, although these are generally of satisfactory or good quality and, hence, require little editing.

2. The Japan Information Center of Science and Technology
15 Itibantyo
Tiyoda-ku
Tokyo, Japan

Custom translations of Japanese publications can be ordered and obtained from the Japan Information Center of Science and Technology at the above address. The translation rate for a full-scale translation is $13 per 1,000 words in English. An additional charge is made for airmail postage.

Typewritten translations - an original copy plus a designated number of carbons - are supplied. Glossy prints of all illustrations that appear in the original paper are also furnished with each translation. However, the photographs are numbered, identified, and supplied as a set of attachments; they are not incorporated or mounted in the translation proper. The photographic work is excellent, and the translation is of good quality.

One of the advantages of this service, apart from the low translation rate, is that it is possible to obtain a translation of any technical item published in a Japanese-language publication without having to supply a copy of the original material. The primary disadvantage, of course, is the timelag between ordering a translation and receiving the finished translation, which can take up to 8 months.

Counterpart Fund Program

Early in 1959, several Government agencies began participating in a new type of effort to obtain custom translations of technical material. This new effort got its impetus from the Public Law 480 translation program, also called the Counterpart Fund Program.

Public Law 489, the Agricultural Surplus Commodities Act of 1954, was amended in 1958 and provided, in Section 104 (k), for the use of local currencies "deposited (abroad) to the credit of the United States" for the acquisition of scientific information by translations of monographs, back volumes of journals that are more than a year old, individual papers, patents, and other scientific materials. Participation in this program is, of course, limited to Federal agencies and is coordinated by the National Science Foundation (NSF).

The first or pilot project established by NSF began in 1959 in Israel when Israeli Foundation Trustees contracted for the translation of a specified number of pages of Russian scientific material. The page quota established
was prorated among various Federal Government agencies and these agencies were called upon to submit appropriate lists of their requirements. Each agency, in turn, reallocated these quotas to various organizational segments.

The selection of material to be translated under the provisions of this program was generally based on the following considerations: (1) The material was of sufficient value and interest to the general or a specialized but nevertheless comparatively large scientific community to warrant translation; (2) the material could not include items of urgent interest, or anything required in the immediate future, because in the early stages of the program the timelag would be appreciable - initially, a year or more elapsed before a draft translation of an average book was returned for editing in the United States, but currently the timelag in some cases has been reduced to 5 months; (3) current publications, issued within a year of the inauguration of this program, could not be included because it was felt that much of this material - if it fulfilled the requirements of the first provision previously cited - would already be in process of translation; (4) in addition to meeting these requirements, the material selected was often of such a nature that the acquisition of a translation by any other means would be virtually impossible. For example, complete translations of technical books, owing to their length and the high cost involved, could not otherwise be ordered or obtained by organizations with limited translation budgets. Copies of all material to be translated had to be supplied to Israel by the agency originating the request.

In the beginning, the successful implementation of this first program was complicated by a number of problems: (1) The difficulty of attempting to obtain competent translators for technical material which in some cases was completely divorced from Israeli technologic program experience and interests; (2) the inadequacy or complete lack of printing and processing facilities; (3) the necessity and responsibility for editing drafts of all translations requested by the U.S. agencies originating the requests. In some cases, preliminary editing of a number of translations indicated a high degree of translation and technical competence, and the practice of submitting translations in such subject areas for editing in the United States was suspended. In other cases, continued and careful editing was required.

Throughout this period, NSF also conducted negotiations with Poland and Yugoslavia for the establishment of similar programs in each of these countries. Late in 1959, the Central Institute for Scientific and Technical Documentation in Warsaw, Poland, contracted for the translation of Polish-language scientific material. Because of the restriction on language source, which meant that only native language material would be translated and that original documents would be locally available, only the appropriate bibliographic citation had to be supplied, not copies of the material requested. In some cases, the authors of the documents or papers would undertake the translations into English. The advantages of this type of program are immediately apparent. The program proceeded more rapidly, and problems encountered were generally less formidable than those in the pilot program. In addition, some of the translating authors would reportedly confirm, clarify, elaborate, or comment on the work reported in the papers being translated in the light of their personal and subsequent experiences.
When implemented, the Yugoslav program will be primarily concerned with translations from Serbo-Croatian. However, arrangements for a counterpart program in this country have not yet been finalized.

Israel, Poland, and Yugoslavia will supply multiple, printed copies of all translations. Each agency participating in this program has to specify the number of copies that it will need for internal use. In addition to this number, the Technical Information Division of OTS will receive copies of each item and make them available to the general public. The availability and cost of the copies are reported in Technical Translations of OTS.

A SIMPLE PROGRAM FOR MAINTAINING CURRENT AWARENESS OF FOREIGN TECHNICAL DEVELOPMENTS

Scientists of the Bureau of Mines, as well as the general scientific community, have a definite interest in keeping abreast of developments in similar or related research programs abroad and, therefore, make an effort to survey some selected foreign literature regularly. This is no problem as far as English-speaking and English-reporting countries - England, Australia, New Zealand, or India - are concerned. However, the accessibility of technical information from other countries - Belgium, China, France, Germany, Japan, Poland, the U.S.S.R., and others - is complicated in most cases by a language barrier. Each of these countries has large-scale research programs closely related to the Bureau's.

The problem of communication is particularly acute in the case of Oriental and Eastern-European language publications. The number of scientists who have any real facility with these languages is very small. Most scientists, therefore, must rely on certain basic tools to obtain the information that appears in foreign-language publications. These aids can be classified in two broad categories: (1) Serial English-language reports that include or cover developments in foreign technology, such as cover-to-cover translations of foreign journals, abstract periodicals, or foreign-language publications that regularly include English summaries or resumés and (2) selected special translations that may be available.

One or more of these aids are generally available to the coal technologist interested in foreign serial publications. (See tables 1 and 2.) The lists of special translations that are made available by various organizations greatly supplement the material that appears regularly in the English-language reports.

It would be ideal if cover-to-cover translations of all of the important foreign journals and serial publications were available. The scientists could then readily establish the value of any publication and, if interested, could easily obtain complete details of any work reported. Generally, English abstracts or resumés do not provide that type of information, particularly if they are of the indicative rather than the informative type; if only bald titles or a list of translated titles are available, it is impossible to obtain this information.
However, the scant information provided by titles often stimulates interest, especially if the work reported is directly related to some aspect of the reader's own research problem. The reader may then desire to obtain full details on all available data. In many cases, of course, the translation is a complete disappointment but, until the translation is obtained, no one can be sure - especially not the scientist who has no knowledge of the original language and who generally does not have ready access to the original source material.

Much interest has been exhibited in the Bureau's program to obtain translations to meet the particular needs of the coal scientist. It is a modest program, similar to many others operating in different agencies or organizations. The integration of various efforts by individuals responsible for specific functions in obtaining these translations will be described briefly in the following paragraphs.

Requesting a Translation

All Bureau of Mines, Division of Bituminous Coal requests for a translation should be directed to the librarian of the Bureau of Mines in Pittsburgh, Pa. Translations are not procured independently by the Bureau's coal scientist without requesting the librarian to determine whether the particular translation is already available and, if possible, to obtain it.

Processing a Request

Following receipt of any request by the librarian in Pittsburgh, Pa., the following actions are taken:

1. The translation files already extant in Pittsburgh are checked to determine whether or not the translation has already been acquired or ordered.

   If the material is already available it is, of course, supplied immediately to the interested party. If the material is not available but has already been ordered, the person making the request is informed accordingly and advised that copies will be furnished immediately upon receipt.

   If the translation is not already available in the library collection and, as far as can be determined, is not in process of being translated, the nature of the translation is considered. Subsequent action is based on the following preliminary differentiation: Whether the translation requested is (a) a ready-made translation that could be procured readily from a designated organization or (b) an item that may, or may not, require custom translation.

2. Readymade translations are ordered from the source indicated. Two or more copies of the material are generally obtained - one for the scientist, one for the library collection, and frequently several copies for individuals who would also have an interest in the material but are located at other stations.
3. Translations that may necessitate custom translation are checked on a broader level for availability prior to procurement. A complete bibliographic citation is prepared on a standard Departmental form (DI-215) and is submitted in quadruplicate to the chief of the Bibliography Section of the Central Library, U.S. Department of the Interior, Washington, D.C. The bibliographic citation supplied on the Departmental form is checked against: (a) Lists of foreign journals available in cover-to-cover English translation, (b) if necessary, the library catalog, translation files, and the various domestic and foreign listings of translations that are available to the Bibliography Section, and (c) domestic and foreign translation depositories and information and documentation centers.

4. The Bibliography Section notifies the library in Pittsburgh — usually within 2 to 3 weeks — of the availability and price of the translation requested. If the translation is already available from any source then the library in Pittsburgh processes an order for the procurement of the translation from the source designated.

Occasionally, on the basis of this information, the Bibliography Section can acquire a copy of the translation requested — particularly if the translation was commissioned by or for some other Government organization — and will then relay copies of the material to the library in Pittsburgh.

However, if the comprehensive check initiated by the Bibliography Section indicates that a translation is not available, then the desirability or practicability of obtaining a custom translation is weighed. The limited translation budget of the Division of Bituminous Coal would permit custom translations of approximately 20 articles or an equivalent of 1 book each year. This limitation prohibits indiscriminate translations.

5. If the cost of the anticipated translation appears formidable, the item is reevaluated from the technical standpoint by the scientist. If he has not already done so, he will generally consult any abstract that might be available. Sometimes, if an abstract is not available, an order for the abstracting of the article is processed to promote the scientist's ability to determine, as precisely as possible, whether in his judgment a full-scale translation would be warranted or worthwhile.

The Division of Bituminous Coal does not commission or undertake full-scale translation of books under its operating budget. However, if costly cover-to-cover translations of books or other materials appear worthwhile, a request is processed for the inclusion of such materials in the Counterpart Fund Program as soon as a new quota becomes available. Alternatively, selected chapters or segments of particular interest can be, and sometimes are, translated. The use of cooperative translators also permits, occasionally, the acquisition of a compromise translation — a combination consisting of complete translation of some selected chapters and informative abstracts of others.

6. If a scientist expresses a real need for a custom translation, every effort is made to secure it economically, promptly, and in adequate supply. Naturally, the quality of the translation is also an important factor. The
selection of a translator or translation source depends on each of these factors. An appropriate order is placed, and the translation is then officially in process. Sometimes, when an individual translator rather than a commercial establishment is employed, some additional responsibility for various aspects of the translation must be assumed by the Bureau. For example:

(a) Any figures and illustrations, graphs, and other materials, which the translator cannot supply because of his limited facilities, must be reproduced while the translation itself is in process.

(b) The total finished translation, typed on ditto or plastiplate, must be reproduced and assembled. Any custom translation commissioned by the Bureau's coal research personnel or made by or for the Bureau's coal scientists is generally supplied in multiple copies - 35 or occasionally more - to permit all personnel in the various field stations, their libraries, exchange friends abroad, and other facilities too, to have access to all of these items.

7. Whenever any new readymade or custom translation is received, it is cataloged, added to the list of translation accessions, and distributed. Readymade or custom translations bearing restrictions on their distribution are cited in these lists but are not made available to personnel outside of the organization. Custom translations supplied in multiple copies, with no restrictions imposed by the translating organization on either their distribution or disposition, are made available to all Bureau personnel and, wherever possible, to the technical community in general.

In addition to the designated individuals on the distribution list for such translations - primarily Bureau people at various centers and laboratories and a limited number of exchange people - two copies of each unrestricted custom translation supplied to the Bureau are forwarded to the Bibliography Section of the Central Library in Washington. One copy is deposited and cataloged in the Library's collection - the translation depository - and the other copy is immediately relayed to OTS for inclusion in Technical Translations.

The timelag between receipt and completion of a request for a translation varies generally from 3 to 6 months. Items urgently needed and commissioned locally can be made available more promptly - within 2 weeks to 1 month - by arrangement with the translation source.

8. Lists of translations are compiled and issued by the library in Pittsburgh at irregular approximately bimonthly intervals. These lists include all the translations related to different aspects of coal technology and, to a lesser extent, other subject areas as well that have been acquired by either the library in Pittsburgh or the field stations. The List of Accessions published monthly by the Central Library in Washington also includes in addition to recent English-language acquisitions listings of translations available in the Department. The translations are tagged with a prefix abbreviation "TR" to permit ready identification. The List of Accessions is, of course, available free of charge from the library. The availability of all items acquired by the
Central Library or regional libraries of the Department is subsequently reported in Consolidated Translation Survey by CIA and Technical Translations by OTS. Thus, the general public is advised of the availability of each new item in the Bureau’s collection and frequently has access to the physical translation as well.

Many people collaborate in this translation effort. For example, the field personnel report any translation that they may have made or acquired from some other source, and the librarian in Pittsburgh files and compiles this information in the Translation Lists and then, in turn, informs the Bibliography Section of the Central Library of the availability of these translations. Subsequently, the Bibliography Section relays the information to CIA and to OTS, and these organizations then cite this information in their respective publications.

In this manner, the technical or scientific community is advised of all translation efforts in the field of coal research by the Bureau, and it is informed on how and where to obtain copies of the desired material.

CONCLUSIONS AND RECOMMENDATIONS

The cooperation of all participants and interested parties is required for the development and maintenance of an efficient organization or system for obtaining and disseminating information on foreign technology. Some of the practices and restrictions that are helpful in resolving, at least to some extent, the problems associated with consistent monitoring of foreign literature by any organization or individual are cited below:

1. Maintain a continuous surveillance of selected publications or sources that are helpful and regularly contain items of distinct interest, such as Chemical Abstracts, Fuel Abstracts, and U.S.S.R. Materials and Materials Processing Equipment. Check a few publications over a period of at least 3 to 4 months, and decide which publications deserve regular attention.

2. Supplement abstract and other informative sources with selected lists of translations. Keep up with the two or at the most three lists that are most useful. Determine whether CTS, TT, or possibly DSIR's LLU Translations Bulletin is most valuable. Scanning these publications regularly will take from 30 to 60 minutes each month, but the investment may be worthwhile. Try to get copies of these publications to mark them up at will in order to draw attention to items of interest and facilitate subsequent processing.

3. Do not order readymade or custom translations independently. Use existing facilities for checking on availability and, wherever possible, for ordering or acquiring translations.

4. Advise other interested parties of the availability of any translation that you yourself may have made or acquired - even a draft can be valuable.
If affiliated with the U.S. Department of the Interior, advise the local librarian, who in turn will advise the chief of the Bibliography Section in Washington of any new acquisition. If possible, supply one or two translation copies that can either be filed in the library or be forwarded to OTS. If not affiliated with the Department or any other Federal agency that has a similar translation liaison program, advise and, if possible, deposit copies of translations made with the John Crerar Library in Chicago.

The effective coordination and integration of various efforts to solve the problems associated with the acquisition and dissemination of scientific material from abroad as well as to promote the efficiency and optimum capabilities of all of the Bureau's scientists, requires the continuous cooperation of every individual concerned with any aspect of these problems.