RESTRICTED
SECURITY INFORMATION

LIST OF CURRENT AND PLANNED PROJECTS OF THE TRACE ELEMENTS PROGRAM, U. S. GEOLOGICAL SURVEY

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Trace Elements Investigations Report 201

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

LIST OF CURRENT AND PLANNED PROJECTS OF THE TRACE ELEMENTS PROGRAM, U. S. GEOLOGICAL SURVEY

Compiled By

R. C. Vickers

November 1951

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Trace Elements Investigations Report 201

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Compiled by

R. C. Vickers

INTRODUCTION

This summary lists the Geological Survey's current and future investigations of uranium and other elements of related interest.

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8. Phair, George, and Shimamoto, K. O., Mineralogy and petrology of pitchblende deposits and associated igneous rocks in the following areas: Central City and Blackhawk, Gilpin County; Idaho Springs, Clear Creek County; Fort Collins, Larimer County; and Boulder, Boulder County, Colorado.

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2. Larsen, E. S., and others, Lead-uranium-thorium relationships in mineral components of granites with particular reference to the Southern California batholith and the Southeastern United States.

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5. Finch, W. I., Geologic reconnaissance of areas of pre-Morrison formation outcrop in Utah and Arizona, to determine their relative worth for diamond-drill exploration and development.

6. Smith, J. F., Jr., and others, Geologic mapping and detailed study of the Shinarump conglomerate in the Capitol Reef area, Utah.

7. Stugard, Frederick, Jr., Geology and appraisal of uranium deposits at the Bulloch claims, Kane County, Utah.

8. Stugard, Frederick, Jr., and others, Geology, search for, and appraisal of uranium deposits at Silver Reef, Washington County, Utah.

9. Weeks, A. D., Preparation of charts and report on water-soluble and clay minerals in formations above and below the Morrison.

10. Withington, C. F., Diamond-drill exploration and development to find and outline uranium deposits and to determine the ore reserves of the Thompsons district, Grand County, Utah.

Future Investigations.

11. Craig, L. C. (project leader), and others, Studies of the porosity and permeability characteristics of the Shinarump conglomerate and related formations, and their relationship to uranium deposits in the Shinarump conglomerate.

12. Finch, W. I., and others, Diamond-drill exploration, probably including development, of the Shinarump conglomerate in various areas in Utah and Arizona.

13. Smith, J. F., Jr. (project leader), and others, Geologic mapping and study of the uranium-bearing formations and of the copper-uranium deposits in areas to be selected during progress of pre-Morrison project, including Circle Cliffs, Garfield County, Utah; Dark Canyon area, San Juan County, Utah; Elk Ridge area, San Juan County, Utah.

VIII. GEOLOGY OF URANIUM DEPOSITS

D. Sandstone-type deposits

3. Utah

Future Investigations (continued).

14. Smith, J. F., Jr. (project leader), and others, Geology of the uranium and copper-uranium deposits in areas to be selected during progress of pre-Morrison project; re-examination of uranium-bearing formations in areas on which adequate general geologic maps are available in published reports; i.e., San Rafael Swell, Utah; Monument Valley, Utah; area between Green and Colorado Rivers, Utah, Green River Desert-Cataract Canyon region, Utah.

15. Smith, J. F., Jr., and others, Guides, habits, and controls of copper-uranium deposits in the Shinarump conglomerate in the Colorado Plateau.

16. Stephens, H. G., Riley, L. B., and others, Study of the character, distribution, and relation to carnotite deposits of sulfide minerals in the Salt Wash sandstone member of the Morrison formation.

4. Other states and general

See also: III, 6, 9, 10, 11, 12; IV, 1, 2; V, 1; VI, 2, 5, 6, 9, 13, VII, 4; VIII C8, 11.

Current Investigations.

1. Keiser, H. D., and others, Analysis of engineering data as related to exploration and development techniques, and mining of uranium deposits on the Colorado Plateau.

2. Page, L. R. (project leader), and others, Geology and appraisal of carnotite deposits in the Dakota sandstone, near Edgemont, South Dakota.

3. Sheridan, D. M., and others, Geology, search for, and appraisal of schroeckingerite deposits in the vicinity of Lost Creek, Sweetwater County, Wyoming.

VIII. GEOLOGY OF URANIUM DEPOSITS

D. Sandstone-type deposits

4. Other states and general (continued)

Future Investigations.

4. Craig, L. C., and others, Special study of the distribution of volcanic products in the Triassic and Jurassic sequence with particular regard to its relation to uranium deposits.

5. Love, J. D., and others, Geology, search for, and appraisal of uranium deposits in the Pumpkin Buttes area, Wyoming.

6. Page, L. R. (project leader), and others, Reconnaissance search for and appraisal of uranium deposits in the Encampment and Rawhide Buttes area, Wyoming.

E. Black shale, lignite, and coal

1. States east of the Mississippi River

Current Investigations.

1. Conant, L. C., Geology and appraisal of uraniferous black shale in the Chattanooga formation of Tennessee.

2. States west of the Mississippi River

See also: V, 3; VIII D4, 5.

Current Investigations.

1. Bachman, G. O., Vine, J. D., Moore, G. W., and Read, C. B., Ore control and guides to the origin of carnotite and uranium-bearing coal on La Ventana Mesa, Sandoval County, New Mexico.

2. Bachman, G. O., and Read, C. B., Reconnaissance investigations for uranium in the Dakota formation, Sandoval County, New Mexico.

3. Denson, N. M. (project leader), and others, Reconnaissance search for uraniferous lignite and black shale in the western states.

VIII. GEOLOGY OF URANIUM DEPOSITS

E. Black shale, lignite, and coal

1. States west of the Mississippi River

Current Investigations (continued).

4. Denson, N. M., Bachman, G. O., and Zeller, H. D., White River-Arikaree source beds of uranium and their relationship to radioactive lignite deposits in the Dakotas.

5. Deul, Maurice, Lithology and composition of lignites with reference to manner of occurrence of contained uranium.

6. Hail, W. J., Gill, J. R., and Duncan, D. C., Uranium-bearing carbonaceous shale and lignite deposits and their relationship to radioactive tuff, Goose Creek district, Cassia County, Idaho.

7. Masursky, Harold, and Pipiringos, G. N., Uranium-bearing lignite deposits in the Red Desert and their relationship to the Lost Creek schroeckingerite deposits, Sweetwater County, Wyoming.

8. Vine, J. D., and Moore, G. W., Significance and geologic control of uranium-bearing coal in the Caribou Mountains, Bonneville County, Idaho.

9. Zeller, H. D., Results of diamond drilling of uranium-bearing lignite deposits in Harding and Perkins Counties, South Dakota, and Bowman County, North Dakota.

F. Phosphate rocks

1. Southeastern phosphate field

See also: III, 2; VI, 3.

Current Investigations.

1. Altschuler, Z. S., Petrography and composition of uraniferous phosphates from the Gulf of Mexico.

2. Cathcart, J. B., and others, Areal distribution of uranium and phosphate in the land-pebble phosphate district, Florida.

VIII. GEOLOGY OF URANIUM DEPOSITS

F. Phosphate rocks

1. Southeastern phosphate field

Current investigations (continued).

3. Cathcart, J. B., and others, Areal variations of the thicknesses of the phosphatic strata and overburden in the Florida phosphate field to determine their relationship to the origin and distribution of the deposits.

4. Cathcart, J. B., and others, Compilation and interpretation of company information to revise, from time to time, the phosphate reserves of the land-pebble district, Florida.

5. Cathcart, J. B., Altschuler, Z. S., and others, Leached zone, distribution and origin, Florida phosphate field.

6. Cathcart, J. B., and others, Mine mapping and studies to determine stratigraphic, lithologic, and local structural relationships of the Florida land-pebble deposits.

7. Cathcart, J. B., Preliminary survey of the reserves of leached zone on dumps in the Bone Valley field, Florida.

8. Cathcart, J. B., and others, Relation of Bone Valley to Citronelle and Caloosahatchee formations to the north, south and east, Florida phosphate field. Drilling data from Mobile drill will be used in this investigation.

9. Cathcart, J. B., and others, Relation of Bone Valley to Hawthorne and Pleistocene sands, Florida phosphate field.

10. Cathcart, J. B., and others, Studies of the configuration and extent of the surface of the Hawthorn formation below the phosphate deposit, and its relationship to the origin of the phosphate deposits in Florida.

Future Investigations.

11. Cathcart, J. B., and others, Areal distribution of phosphatized limestone nodules, fossil casts, black pebble, dull-white pebble, various sized pebbles, and other constituents of the Bone Valley formation, Florida.

VIII. GEOLOGY OF URANIUM DEPOSITS

F. Phosphate rocks

1. Southeastern phosphate field

Future Investigations (continued).

12. Cathcart, J. B. (project leader), and others, Comparison of chemical analyses in bedrock, matrix, leached zone and overburden, Florida phosphate field.

13. Cathcart, J. B., and others, Geologic map of the pre-Pleistocene formations in Polk and Hillsborough Counties, Florida.

14. Cathcart, J. B., Investigation of graphic methods of presentation of data in the Florida phosphate field.

15. Cathcart, J. B. (project leader), and others, Prospecting for phosphate deposits of favorable areas on the southeastern coastal plain outside the land-pebble district, Florida.

16. Cathcart, J. B., Altschuler, Z. S., and others, Studies concerning regional variations in the thickness and composition of the Hawthorn formation, including heavy mineral and acid insoluble studies, to determine possible relationships to the Florida phosphate deposits.

17. Denny, Charles, and others, Preparation of pre-Pleistocene drainage maps and the effect of the drainage on the formation of the leached zone, Florida phosphate field.

18. Denny, Charles, and others, Studies of the geomorphology of the land-pebble phosphate district, Florida, and its relation to the phosphate deposits.

19. Ketner, K. B., Exploration of leached zone on the French and Noralyn properties (International Minerals and Chemical Corp.).

20. Petersen, R. G., Exploration of leached zone on the Homeland and Clear Springs property (Virginia-Carolina Chemical Corp.).

2. Northwestern phosphate field

See also: III, 1.

VIII. GEOLOGY OF URANIUM DEPOSITS

F. Phosphate rocks

2. Northwestern phosphate field (continued)

Current Investigations.

1. Bergman, K. S., Statistical analysis of analytical data on Northwest phosphate deposits.

2. Gulbrandsen, R. A., Investigation of carbonate rocks of the Phosphoria formation of western Wyoming.

3. Krauskopf, K. B., Geochemistry of minor metals in the Phosphoria formation.

4. Kummel, Bernhard, Triassic paleontology and stratigraphy in the western phosphate field.

5. Sheldon, R. P., Correlation of Phosphoria formation strata in the Jackson region, Wyoming-Idaho.

6. Steele, W. J., Smedley, J. E., and others, Fauna and ecology of the Phosphoria formation in Montana, Idaho, Wyoming, and Utah.

7. Swanson, R. W., and others, Compilation of columnar sections of the Phosphoria formation in Montana, Idaho, Wyoming, and Utah.

8. Waring, R. G., Correlation of Park City formation strata in the Salt Lake City-Provo region, Utah.

9. Warner, M. A., The origin of the Rex chert, with particular emphasis on the conditions of precipitation of silica from marine waters.

10. Willey, E. C., and others, Ownership classification of western phosphate lands.

Future Investigations.

11. Cressman, E. R., Gulbrandsen, R. A., and others, Geology of the S $\frac{1}{2}$ of the Lanes Creek quadrangle, W $\frac{1}{2}$ of the Crow Creek quadrangle, and the SE $\frac{1}{4}$ of the Slug Creek quadrangle, Idaho.

12. McKelvey, V. E., Swanson, R. W., and others, Regional stratigraphy of the Phosphoria formation, including regional correlation, description, and analysis of areal variation in thickness and composition of strata.

VIII. GEOLOGY OF URANIUM DEPOSITS

F. Phosphate rocks

2. Northwestern phosphate field

Future Investigations (continued).

13. McKelvey, V. E., Swanson, R. W., and others, Estimation of reserves of phosphate, uranium, and minor metals in the western phosphate field.

3. Other areas and general

See also: III, 6; IV, 1.

Current Investigations.

1. Gould, H. R., and Stewart, R. S., Distribution of uranium in the water and bottom sediments of the Gulf of Mexico.

2. Gould, H. R., and Stewart, R. S., Investigation of phosphatic sediments on the sea floor off the West Coast of Florida with special reference to their radioactivity and uranium content.

Future Investigations.

3. Gould, H. R., Biogeochemistry of phosphorus in sea water and its relation to the formation of uraniferous phosphate deposits.

4. Gould, H. R., Investigation of the phosphate and the uranium budget of the Gulf of Mexico.

G. Uraniferous placers

No investigations in progress or planned.

H. Miscellaneous sedimentary rocks

Current Investigations.

1. Love, J. D., Tertiary source beds of uranium--their lithologic characteristics, areal distribution , and geologic occurrence in Wyoming.

VIII. GEOLOGY OF URANIUM DEPOSITS

H. Miscellaneous sedimentary rocks

Current Investigations (continued).

2. Vickers, R. C., and Schnabel, R. W., Reconnaissance search for uranium in the Clinton-type iron ores in Eastern United States.

I. Natural waters

See also: VIII F3, 3, 4.

Current Investigations.

1. Aberdeen, E. J., and others, Investigation of natural waters as a source of uranium.

J. Radioactive natural gas and oil

See also: IV, 2; VI, 11; VIII C8, 11.

Current Investigations.

1. Gott, G. B., Faul, Henry, Manger, G. E., and others, Radon-helium-source investigations of natural gas with particular reference to the Panhandle field, Texas.

Future Investigations.

2. Davis, F. J., Faul, Henry, and others, Chemico-physical behavior of radon: Transportation of radon in ground-water and natural gases. (Cooperative investigation with Oak Ridge National Laboratory.)

3. Faul, Henry, and others, Distribution of radon in mine openings, soil gases, and the atmosphere.

IX. GEOLOGY OF THORIUM DEPOSITS

A. Igneous rocks, pegmatites, veins, and related deposits

See also: III, 7.

Current Investigations.

1. Dellwig, L. B., and others, Geology, search for, and appraisal of thorium and uranium deposits in the Wet Mountains, Custer County, Colorado.

2. Olson, J. C., and others, Reconnaissance search and appraisal of thorium deposits in the United States.

3. Shawe, D. R., and others, Geology and appraisal of thorium and rare earths in the Mountain Pass district, San Bernardino County, California.

Future Investigations.

4. Olson, J. C. (project leader), and others, Geology, search for, and appraisal of thorium deposits in the Lemhi Pass district, Idaho and Montana.

5. Olson, J. C., and others, Reconnaissance search for and appraisal of thorium and rare earth deposits in alkalic intrusives in the Gallinos and Cornudas Mountains, New Mexico.

6. Pierson, C. T., and Burbank, W. S., Detailed geologic mapping of thorium prospects in Gunnison County, Colorado.

B. Placers

See also: VI, 18, 19.

Current Investigations.

1. Overstreet, W. C., and others, Geology and appraisal of monazite placers in the southeastern states including evaluation of processes and factors effecting the concentration of monazite.

2. Overstreet, W. C., and others, Mapping and reconnaissance appraisal of monazite placers in the southeastern states.

IX. GEOLOGY OF THORIUM DEPOSITS

B. Placers

Future Investigations.

3. Griffitts, W. C., and others, Minor metal content of rocks of the Shelby quadrangle, North Carolina.

4. Olson, J. C., and others, Investigation of placer monazite concentrations in and derived from the Deadwood formation of the Big Horn Mountains, Wyoming.

5. Olson, J. C., and others, Reconnaissance search for and appraisal of monazite in placers at Morris, Montana; South Pass Atlantic City area, Wyoming; Adirondack Mountains, New York.

6. Overstreet, W. C., and others, Appraisal of selected placers on Sandy Run, Knob Creek, and Buffalo Creek near Shelby, North Carolina. (Cooperative investigation with the Bureau of Mines.)

7. Overstreet, W. C., and others, Investigations of xenotime-zircon parallel intergrowths in Cleveland County, North Carolina.

8. Overstreet, W. C., and others, Relation of variations in chemical composition to variations in physical properties of monazite and xenotime in the southeastern states.

X. GEOLOGY OF BERYLLIUM DEPOSITS

Future Investigations.

1. Redden, J. A., Pegmatites in the Black Hills.

2. Schaller, W. T., Optical properties of beryl.