

DUKE'S
SHORT COURSE IN PROSPECTING
and
MINERAL IDENTIFICATION
and
QUICK QUALITATIVE ANALYSIS

Volumes One, Two and Three

This is not just another book of minerals or merely a book of tests, but is a new original system in prospecting for, hunting and finding of 40 of the most important elements and the quick and accurate identification of the 300 or more minerals, rock or ores in which they may be found.

VOLUME ONE-PART ONE

Systematic Prospecting and Mineral Identification

In this part we take up the prospecting end of the business. In the hunting and finding of minerals and the basic principals of mineral identification. Divided up into five easy to understand and easy to follow lessons for home study purposes.

LESSON ONE: The Mineral Situation

Your opportunities in the newer and rarer minerals of today; what they are; why overlooked in the past-and how you can start finding and cashing in on them.

LESSON TWO: Systematic Prospecting

Modern prospecting; where to go and what to do when you get there; the geological formations in which all minerals are found, and how to identify them.

LESSON THREE: Mineral Identification

The 92 elements from which everything else in the world is made, and how by the identifying of the elements we automatically identify all minerals, rocks or ores.

LESSON FOUR: The Field test Kit

In this we teach you everything you need to know about chemistry; your few pieces of test equipment and how to use them; how to make a field test kit to carry in the field- and quickly and accurately identify all minerals where you find them!

LESSON FIVE: Quick Method of Learning

Quick method of learning all tests in Part Two. By which we guarantee to teach anyone, in the short space of ten days time, how to make a complete qualitative analysis of any rock pick up anywhere, and if any of the 40 elements covered in Part Two are present—you can and will identify them.

If any of these 40 ELEMENTS are PRESENT you can FIND THEM

1. Aluminum	9. Cobalt	17. Iron	25. Palladium	33. Tellurium
2. Antimony	10. Columtium	18. Lead	26. Platinum	34. Thallium
3. Arsenic	11. Copper	19. Magnesium	27. Rhodium	35. Tin
4. Bismuth	12. Did	20. Manganese	28. Ruthenium	36. Titanium
5. Cadmium	13. Fluorine	21. Mercury	29. Selenium	37. Tungsten
6. Carbon	14. Germanium	22. Molybdenum	30. Silver	38. Uranium
7. Chlorine	15. Gold	23. Nickel	31. Sulphur	39. Vanadium
8. Chromium	16. Iridium	24. Osmium	32. Tantalum	40. Zinc

What to Assay for-What Do Your Rocks Contain

This is the purpose of Qualitative Analysis-To find out what valuable element or elements to have it assayed for; these can cost from \$100. and up each. Many times this is money spent only to find that your rock con nothing of value, and thus your money is thrown any; and if you don't have it made then you may pass up a fortune!

FOR WHOM THESE INSTRUCTIONS ARE INTENDED

Introduction

If you are a Prospector hunting commercial or industrial minerals or ores as a business; or a mine owner who would like to know how to check up on your own mine for other valuable minerals which you may now be overlooking; or a mining Engineer or Ecologist seeking a quick and accurate means of checking mineralized zones or formations; or an Assayer seeking a quicker method of qualitative analysis; or a Mineral Collector seeking a quick method of identifying and classifying your mineral specimens; or an Amateur or Greenhorn who knows nothing whatever about prospecting, minerals, rocks or ores at present but would like to learn something about this interesting and profitable business - these instructions are for you!

They will teach you a new and amazing system which takes all the “guess-work out of mineral identification, easy, simple, quick and accurate! A complete “Short Course in Prospecting and Mineral Identification” by this new system of prospecting for, hunting, finding and identifying or 39 or the most important mineral elements and their 300 or more important minerals, rocks, or ores:

A system-which requires no higher education to understand; or no previous experience or special ability to do; and which requires no previous knowledge whatever of chemistry, or minerals, rocks or ores, and no costly laboratory or test equipment to buy - you can carry your complete laboratory in a shoe box: A system so easy to understand and so simple to follow that we absolutely guarantee that any average 14 year old boy can do the work:

A system which is revolutionizing the prospecting and the mining business: A system by which the prospector may now systematically look for, accurately identify, and thus successfully find 35 or 40 mineral elements with no more time and expense than he has been spending in the past in looking for 5 or 6 by the old hit-and-miss methods: A system by which the mine owner may now quickly and accurately check his own mine, find all the values it may contain, and thus increase his chances for success in the mining business:

A system by which the mining Engineer or geologist may quickly and accurately check-up on mineralized zones and formations. A system by which the Assayer may make a quick absence or presence check-up on all rocks in a few minutes time, and thus, not only save time and expense on blank quantitative assay's, but may also discover unsuspected elements and by suggesting assay's on the same to his clients, greatly increase his assaying business.

A system by which the Mineral Collector or Specimen Hunter may, not only quickly and accurately identify and class if his mineral specimens, but may also combine his hobby of specimen hunting with a knowledge of commercial or industrial minerals which may lead to the discovery of a rich mine and a fortune! A system which requires no previous knowledge of minerals, rocks, or ores, and thus gives the greenhorn an equal chance with old time prospectors regardless of their years of experience in hunting minerals by old methods!

PART TWO
QUICK QUALITATIVE ANALYSIS
And
‘METHOD OF PROCEDURE’

General Information

This, Part Two, contains our “Quick Qualitative Analysis” as the “Method of Procedure” given here is the one we always follow in testing out any unknown rock or ore. In this, the tests are all arranged in systematic order by which we identify the various elements AS WE COME TO THEM, and thus we no longer have to first identify each rock or ore in order to know what element or elements to test or have assayed for as was necessary by old methods of identifying minerals by physical properties. By our system we pay no attention whatever to what any rock looks like - we proceed as follows.

“Method of Procedures”: Simply take your rock or ore (any rock or ore regardless of what it may look like) and powder up a little of it as Fine as possible; you then start right in at Test No. 1, then proceed to make each additional test just as given until you have completed your analysis for all the elements covered there.

Results: If any of the elements covered there are present in your rock or ore, you identify them AS YOU COME TO THEM. Regardless of what your rock or ore may look like.

Example: In Test 1 we identify the two elements, Vanadium and Manganese, and also catch the Sulfides and Carbonates. in Test 2 we catch Molybdenum-Lead and Molybdenum-Oxide. In Test 3 we catch Tellurium and Tungsten (any ores). In Test 4 we catch Tin (any ore). And so on until we have completed our analysis for all the elements covered in Part Two.

First Procedure: In this, all tests are first run on the “crude ore”, not concentrated, or we would wash out some of the lighter elements, such as the oxidized ores in which the elements do not occur in the metallic state in nature. Next to the “Method of Procedures” the two most valuable features of these tests are; The simplicity of explanation, and the condensed form in which the tests are written. So to see the tests as condensed as possible, we will first give here all explanations, rather than at time of testing. Read this as well as all of Part One over carefully before starting in on the actual tests as given in the “Method of Procedures”.

1. Confirmatory Tests: To confirm means to verify or prove. In our method of procedure we will find many of the elements will give a reaction in more than one test, but in some plainer than others. That is, while most tests in Part two are positive, some are merely indicative, in which case, or any case where: there is a doubt, we confirm by other tests and thus make sure before having quantitative assays made.

2. If you do not get at least a slight reaction called for, there is nothing to confirm, so proceed with next test.

3. We will sometimes find that two or more elements will give the same reactions in some tests, but no two elements will give the same reaction in all tests, and thus theft individual identification. Example: Columbium and Tungsten in Test 13 both give a blue color; in Test 3 Tungsten gives a blue color, but Columbium will not, and this identified. It is the same with all other elements under like conditions.

4. TO IDENTIFY MINERALS: Example: In Test 13 the element molybdenum will give a red or rose color with any ore. There are 3 main ores: Molybdenite (MoS); Wulfenite (MoPb); and Molybdate (MoO), Test 9 gives a blue color for MoS, but not for MoPb or MoO; Test 2 gives a blue for either MoPb or MoO, but not for MoS. If Molybdenum in Test 2 and Lead in Test 7 our ore is