

MONTHLY REPORT

SEPTEMBER 1957

MINERAL INDUSTRIES LABORATORY
1430 DEVINE STREET
COLUMBIA, SOUTH CAROLINA

DIVISION OF GEOLOGY
STATE DEVELOPMENT BOARD

DEPARTMENT OF GEOLOGY
UNIVERSITY OF SOUTH CAROLINA

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THE RESEARCH LABORATORY

BELIEVING THAT MORE CAN BE ACCOMPLISHED BY A COORDINATED GEOLOGIC EFFORT IN THE STATE THAN BY INDIVIDUALS WORKING WITH LITTLE OR NO CONTACT WITH ONE ANOTHER, THE STATE DEVELOPMENT BOARD AND THE UNIVERSITY OF SOUTH CAROLINA HAVE JOINTLY UNDERTAKEN THE ESTABLISHMENT OF THIS RESEARCH LABORATORY. THE LABORATORY IS A CENTER FOR COORDINATING GEOLOGICAL EFFORT IN SOUTH CAROLINA. ITS FACILITIES ARE AVAILABLE FOR RESEARCH TO THE SEVERAL GEOLOGISTS IN THE AREA. THE ACTIVITIES WILL SERVE AS A CONTACT BETWEEN THE ACADEMIC AND THE ECONOMIC PHASES WITHIN THE STATE. AT THIS POINT EMPHASIS IS MADE THAT THE LABORATORY IN NO WAY COMPROMISES THE PURPOSE OF THE UNIVERSITY, WHICH IS

ONE OF PURE RESEARCH. RATHER, THE SITUATION IS SUCH THAT ANY PURE RESEARCH IN GEOLOGY BY ITS NATURE YIELDS MUCH OF ECONOMIC VALUE.

LATER MONTHLY REPORTS WILL CARRY SHORT ARTICLES DEALING WITH THE GEOLOGY OF THE STATE AND INFORMATION ON GEOLOGIC ACTIVITIES IN THE STATE.

GEOLOGICAL MAP OF SOUTH CAROLINA

THE COASTAL PLAIN OF SOUTH CAROLINA HAS RECEIVED MUCH ATTENTION AND HAS BEEN MAPPED IN MODERATE DETAIL. THE PIEDMONT OF THE STATE, HOWEVER, HAS RECEIVED LITTLE ATTENTION AND NO MAP IS AVAILABLE. THIS LABORATORY HAS UNDERTAKEN THE COMPILATION OF SUCH A MAP. ONE LARGE WALL OF OUR QUARTERS IS COVERED WITH THIS MAP; IT IS ON A SCALE OF ONE-HALF INCH TO THE MILE. IT IS A "LIVING" MAP IN THAT IT GROWS AS WE OBTAIN NEW INFORMATION ABOUT THE STATE. AT THE PRESENT TIME THE MAP HAS 125 DIP AND STRIKE SYMBOLS; THESE INDICATE THE ORIENTATION IN SPACE OF THE LAYERING OF THE ROCK. THIS MAP WILL ALSO SERVE AS A CONSTANT REMINDER OF THE STATUS OF OUR KNOWLEDGE ABOUT THE GEOLOGY OF THE STATE.

REFERENCE COLLECTION

A REFERENCE COLLECTION OF TYPE SPECIMENS IS BEING ASSEMBLED BY THIS LABORATORY. THESE ROCKS ARE ON PERMANENT FILE IN OUR QUARTERS. THIS COLLECTION ALLOWS ONE TO EXAMINE READILY ROCKS FROM ALL PARTS OF THE STATE AND TO SEE THEIR POSITION ON THE GEOLOGIC MAP; ALL THIS WITHIN A SPACE OF A FEW FEET. AT THE PRESENT TIME THIS COLLECTION CONTAINS 25 SPECIMENS.

SCHOOL COLLECTIONS

THIS LABORATORY RECOGNIZES THE PATENT VALUES DERIVED FROM INTRODUCING GEOLOGY TO CHILDREN AT AN EARLY AGE. IN PURSUANCE OF THIS POLICY WE ARE ASSEMBLING COLLECTIONS OF ROCKS AND MINERALS, WHICH WE ARE PLACING IN PUBLIC SCHOOLS. THIS MONTH WE PLACED COLLECTIONS IN 4 SCHOOLS.

THE UNIQUE OPPORTUNITY FOR GEOLOGY IN
SOUTH CAROLINA

THE FUNDAMENTAL STRUCTURAL UNIT OF THE EARTH'S CRUST IS THE FOLDED BELT. THIS IS AN ELONGATE ZONE IN WHICH SEDIMENTARY AND IGNEOUS ROCK HAVE BEEN SEVERELY DEFORMED AND INVADED BY BODIES OF GRANITIC ROCKS. THE MECHANISM THAT PRODUCES A FOLDED BELT IS NOT YET UNDERSTOOD; MANY THEORIES HAVE BEEN ADVANCED, BUT SUFFICIENT FIELD EVIDENCE TO CHECK THESE THEORIES HAS NOT YET BEEN COLLECTED.

THE APPALACHIAN FOLDED BELT IS ONE OF THE BEST EXPOSED IN THE WORLD. THE VALLEY AND RIDGE PROVINCE, WHICH FORMS THE NORTHWESTERN MARGIN, HAS BEEN STUDIED IN GREAT DETAIL. THE CORE OF THE BELT, HOWEVER, HAS RECEIVED LITTLE ATTENTION. THE PIEDMONT PROVINCE OF SOUTH CAROLINA LIES IN THAT PART OF THE CORE WHERE DEFORMATION HAS BEEN GREATEST; THIS IS THE NORTH CAROLINA-SOUTH CAROLINA SALIENT. THE KEY TO APPALACHIAN

STRUCTURE, AND TO OROGENESIS ITSELF, MAY VERY WELL BE FOUND IN THE PIEDMONT OF SOUTH CAROLINA. EVEN IF A FULL ANSWER IS NOT FOUND, THE UNDERSTANDING OF THE GEOLOGY OF THE PIEDMONT WOULD CONSTITUTE A MAJOR BREAKTHROUGH IN OUR SCIENCE.

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