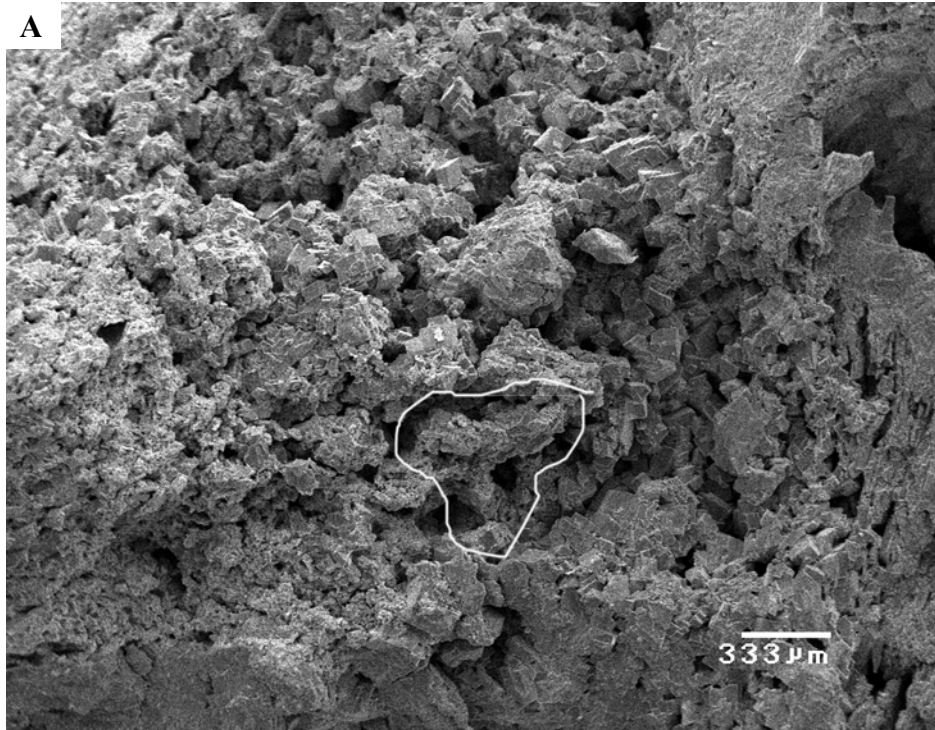


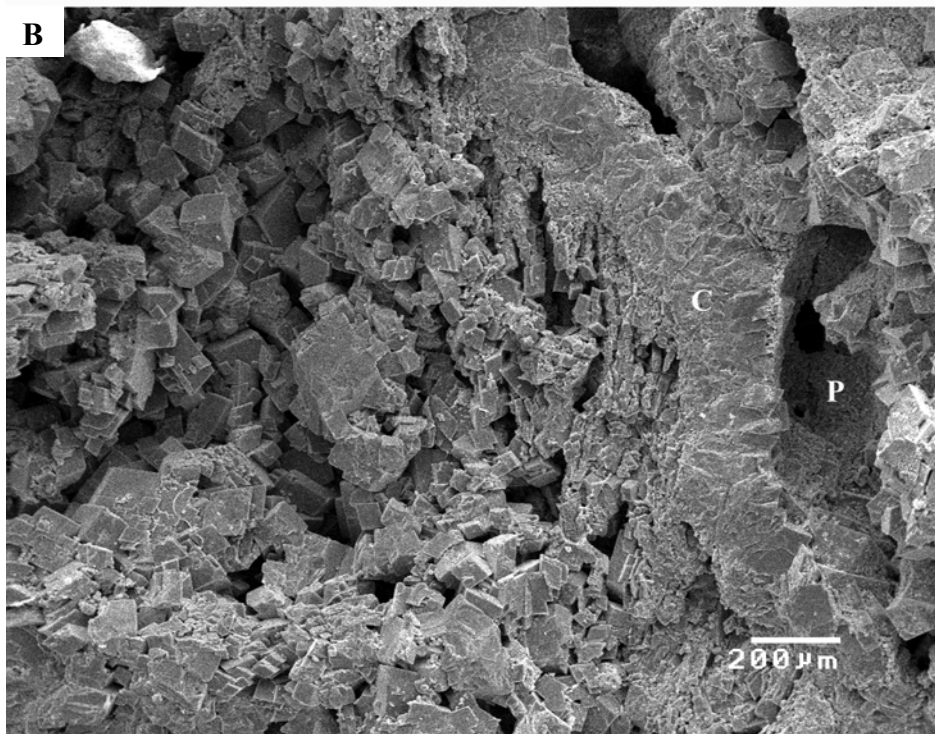
**APPENDIX H:  
SCANNING ELECTRON MICROSCOPY AND  
PORE CASTING PHOTOMICROGRAPHS:  
BUG AND CHEROKEE FIELDS,  
SAN JUAN COUNTY, UTAH**



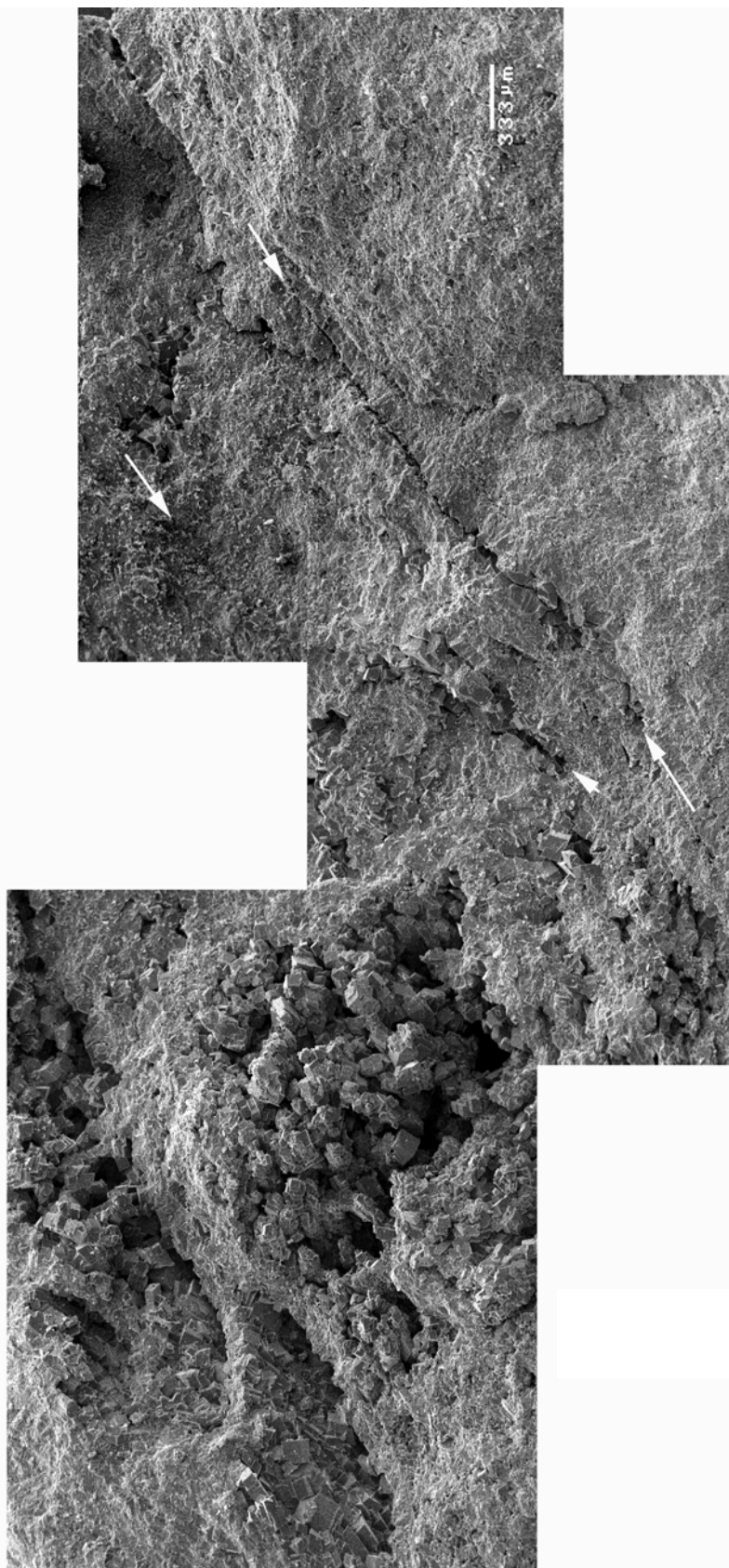
**MAY-BUG 2**  
**6304.0'**



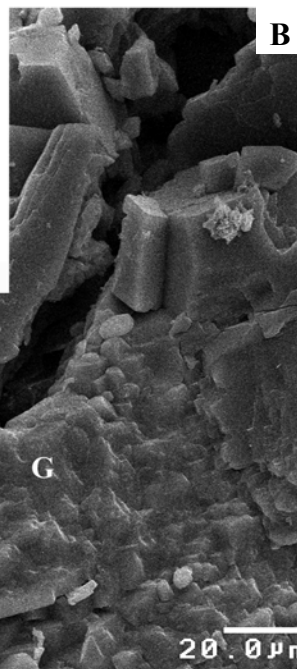
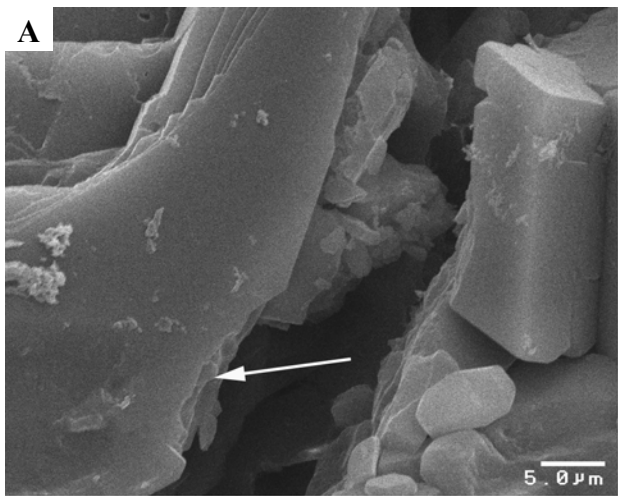
*Photomicrograph 1A. May-Bug 2. SEM photomicrograph of a core plug from 6304.0'. Dolomite with microporosity – BC in a coarse boxwork fabric. Note the T-shaped pattern near the center (outlined). This area is enlarged in photomicrograph 4. Area on the right is enlarged in 1B. Scale represents 333 microns (0.333mm).*



*Photomicrograph 1B. May-Bug 2. SEM photomicrograph of a core plug from 6304.0'. Enlargement showing dolomitized, formerly early aragonite botryoidal, cement (C) formed along the edge of a phylloid algae frond. The algae are represented by the moldic mesopores – MO (P) adjacent to the cement. Intergranular microporosity – BC (black) abundant on the left. Scale represents 200 microns (0.2 mm).*

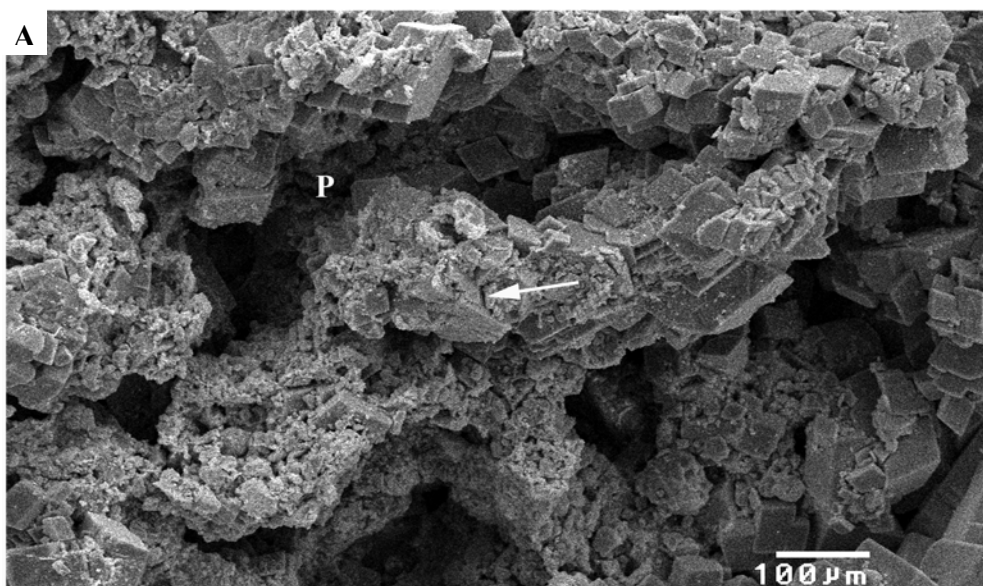


***Photomicrograph 2.  
May-Bug 2.  
Composite SEM  
photomicrograph of  
a core plug from  
6304.0'. Fractures  
(arrows) present  
within areas of  
relatively tight  
dolomite. Area on  
left contains  
intercrystalline  
microporosity – BC  
among the dolomite  
rhombs (D). Scale  
represents 333  
microns (0.333 mm).***

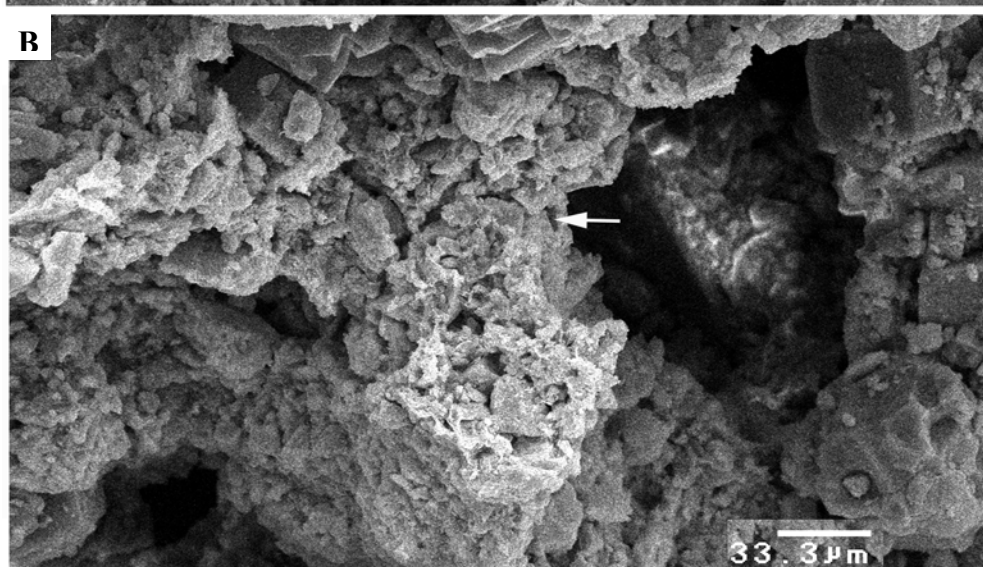


**Photomicrograph 3A.**  
**May-Bug 2. SEM**  
**photomicrograph of a**  
**core plug from 6304.0'.**  
**Enlargement of fracture**  
**in 2 showing scalloped**  
**grain surface (arrow),**  
**evidence of dissolution.**  
**Scale represents 5**  
**microns (0.005 mm).**

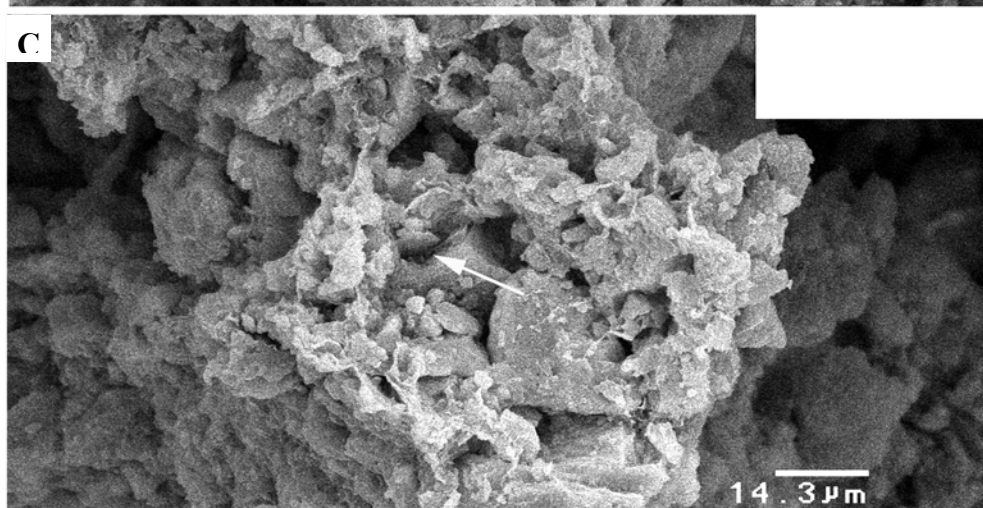
**Photomicrograph 3B.**  
**May-Bug 2. SEM**  
**photomicrograph of a**  
**core plug from 6304.0'.**  
**Enlargement of fracture**  
**in 2 showing dolomite (D)**  
**within it and corroded**  
**grains (G) adjacent to it.**  
**The presence of dolomite**  
**demonstrates that the**  
**fracture was open during**  
**dolomite deposition.**  
**Scale represents 20**  
**microns (0.02 mm).**



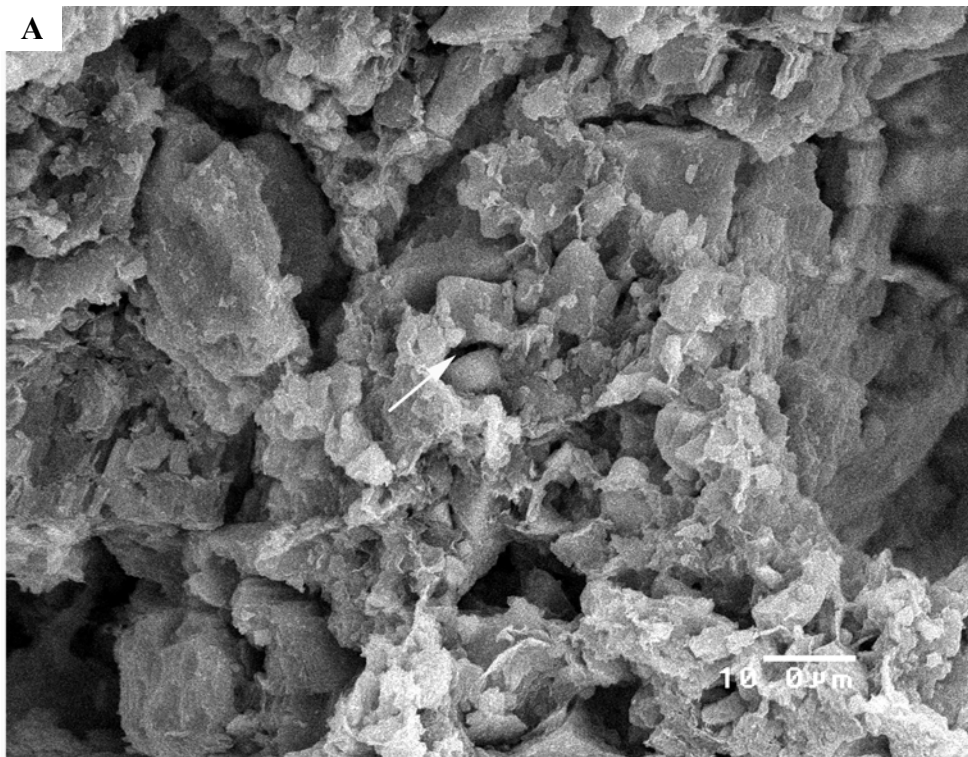
**Photomicrograph 4A.**  
**May-Bug 2. SEM**  
**photomicrograph of a**  
**core plug from 6304.0'.**  
**Enlargement of the**  
**boxwork fabric shown**  
**in 1A. Intergranular**  
**microporosity – BC**  
**(arrow) present, as is**  
**mesovugs - msVUG (P).**  
**Scale represents 100**  
**microns (0.1 mm).**



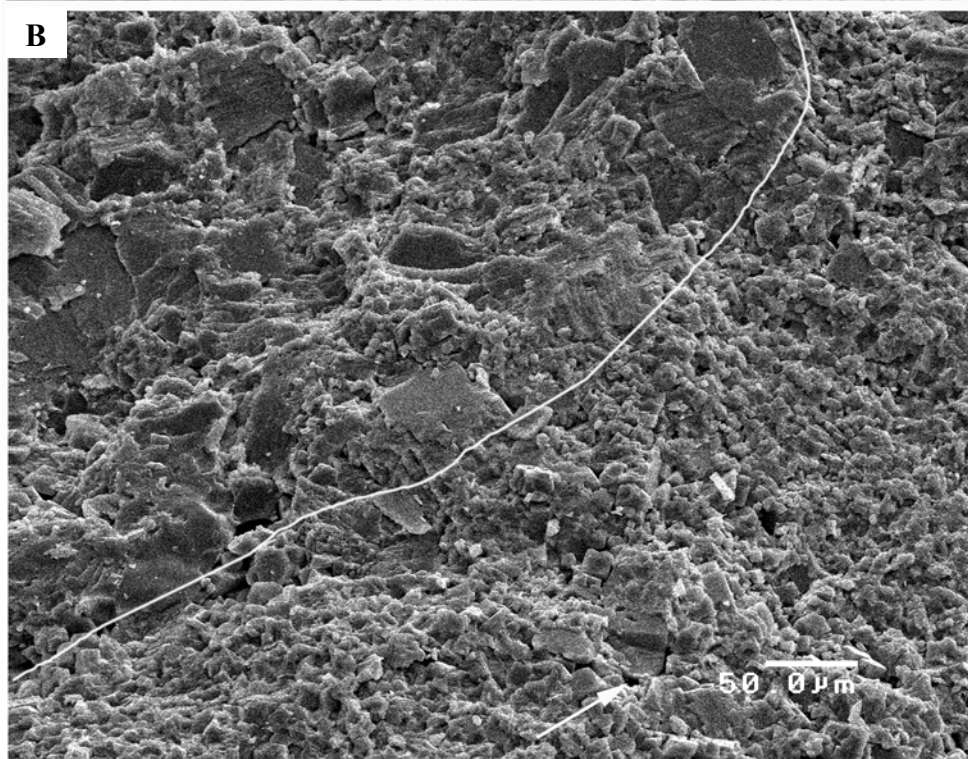
**Photomicrograph 4B.**  
**May-Bug 2. SEM**  
**photomicrograph of a**  
**core plug from 6304.0'.**  
**Enlargement of 4A**  
**showing intergranular**  
**microporosity – BC**  
**(arrow) on connection**  
**of the boxwork fabric.**  
**Scale represents 33.3**  
**microns (0.333 mm).**



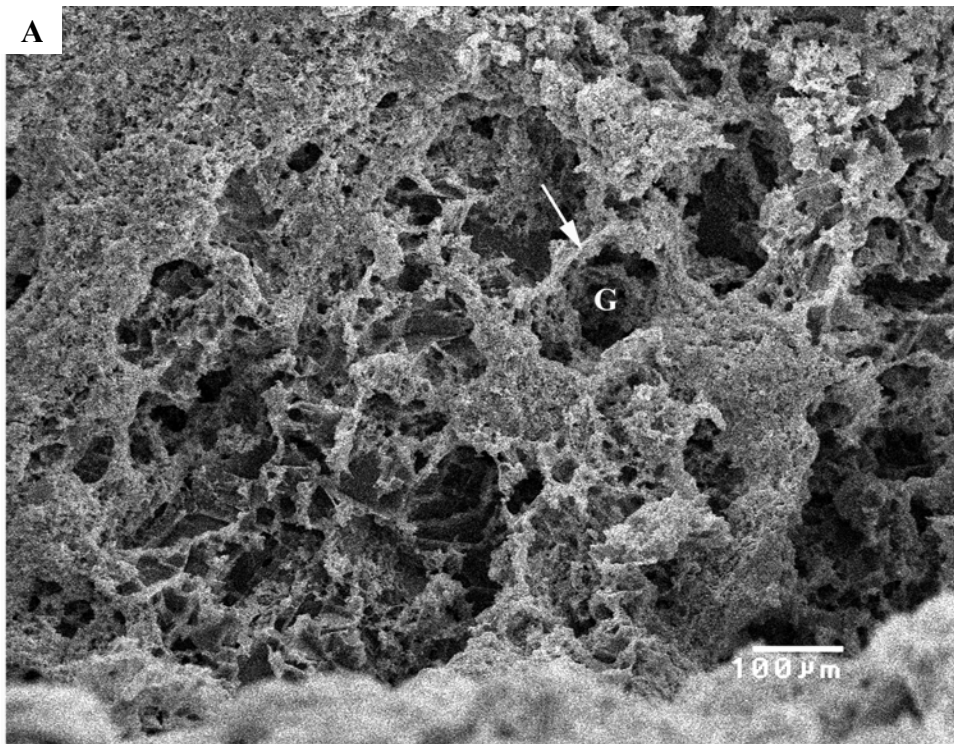
**Photomicrograph 4C.**  
**May-Bug 2. SEM**  
**photomicrograph of a**  
**core plug from 6304.0'.**  
**Enlargement showing**  
**details of the**  
**intercrystalline**  
**microporosity – BC**  
**(arrow) on the**  
**connection of the T-**  
**Shape from**  
**photomicrographs 1A**  
**and 4A. Scale**  
**represents 14.3 microns**  
**(0.0143 mm).**



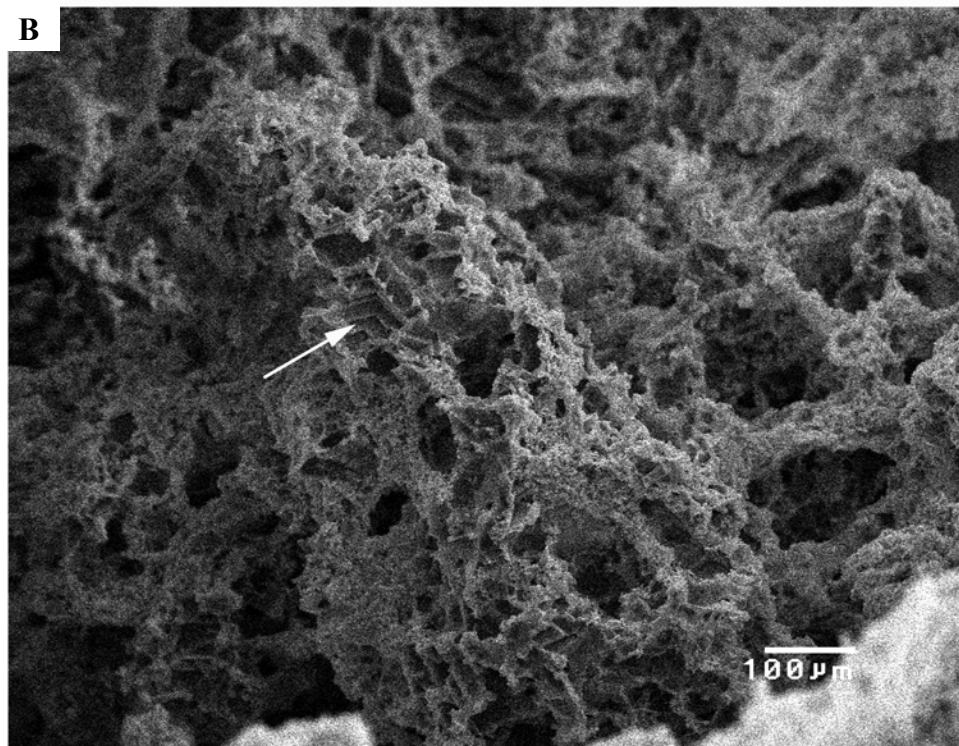
**Photomicrograph 5A. May-Bug 2. SEM**  
*photomicrograph of a core plug from 6304.0'. Enlargement showing details of the intercrystalline microporosity – BC (arrow) on the connection of the T-Shape from photomicrographs 1A and 4A. Scale represents 10 microns (0.01 mm).*



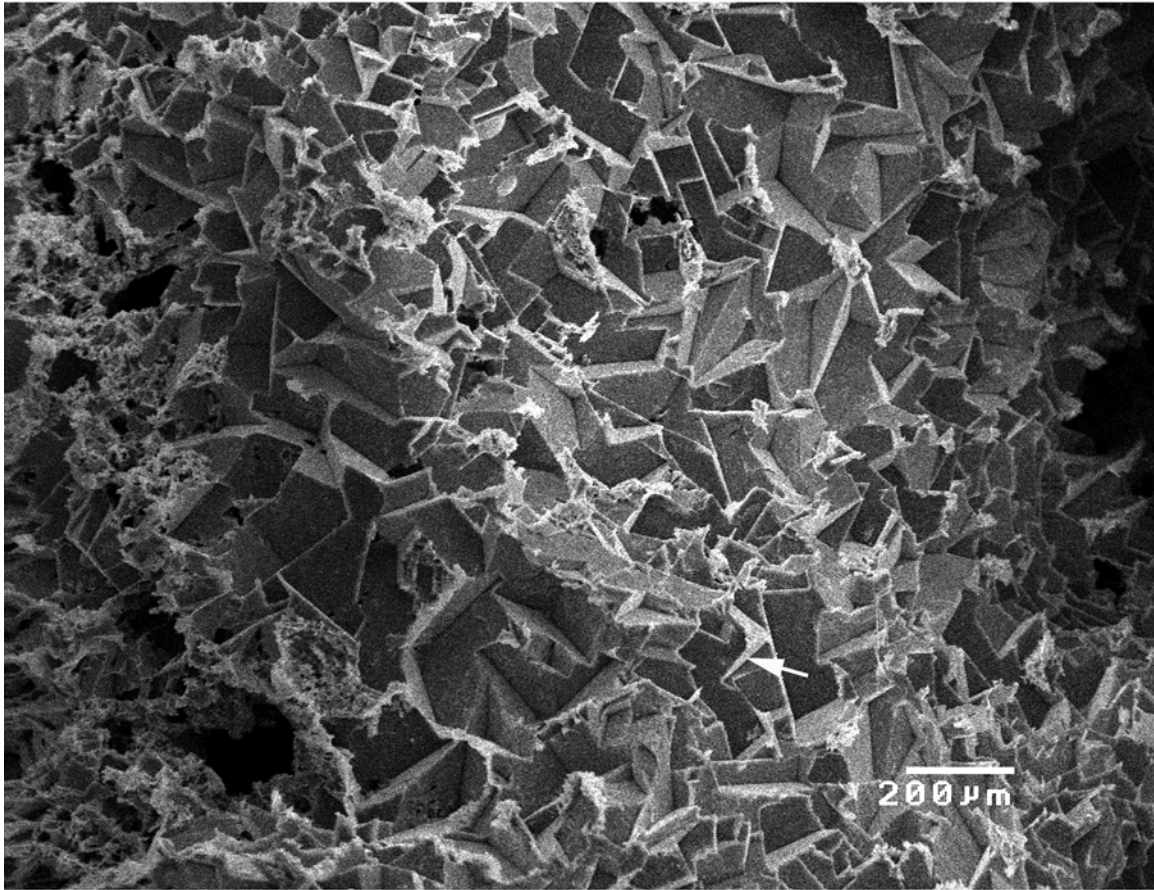
**Photomicrograph 5B. May-Bug 2. SEM**  
*photomicrograph of a core plug from 6304.0'. Contact (white line) between cemented former phylloid algae frond on left and area of intercrystalline microporosity – BC (arrow) on right. Scale represents 50 microns (0.05 mm).*



*Photomicrograph 6A. May-Bug 2. SEM photomicrograph of a pore cast from 6304.0'. Interconnected areas of intercrystalline microporosity – BC (arrow) among grains (G). Note that the solid areas represent porosity. Scale represents 100 microns (0.1 mm).*

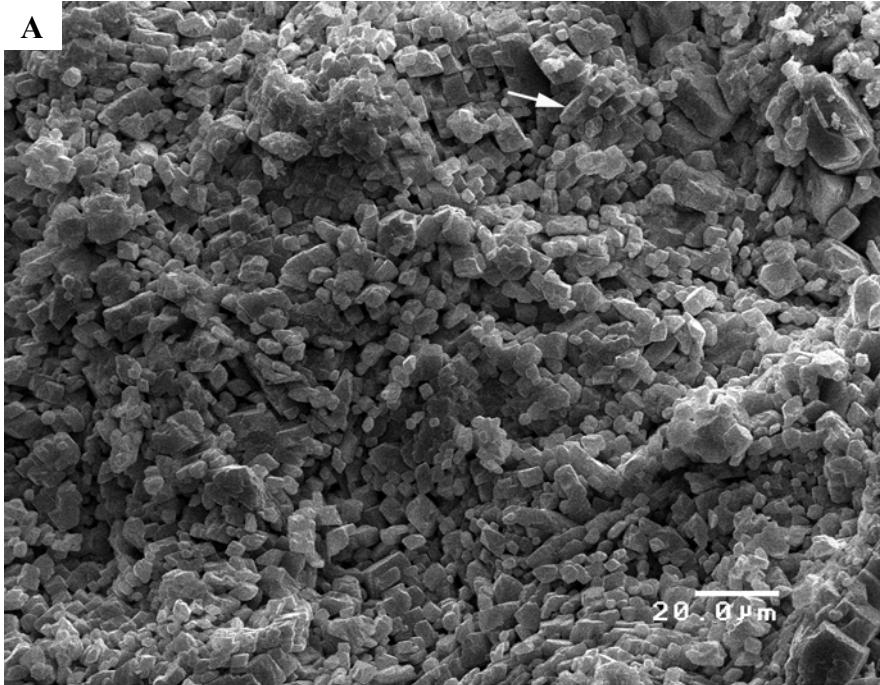


*Photomicrograph 6B. May-Bug 2. SEM photomicrograph of a pore cast from 6304.0'. Intercrystalline microporosity – BC in waffle griddle fabric. Impression of dolomite rhomb (arrow) visible. [Trunk line to micro-BC – TC] Note that the solid areas represent porosity. Scale represents 500 microns (0.5 mm).*

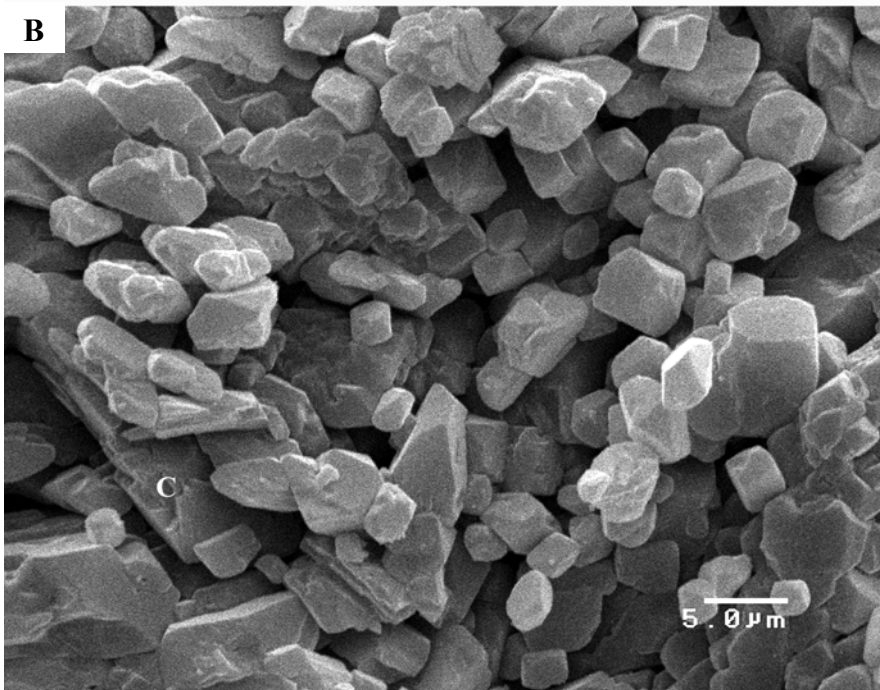


*Photomicrograph 7. May-Bug 2. SEM photomicrograph of a pore cast from 6304.0'. Interconnected intercrystalline microporosity – BC associated with coarse dolomite. Pore throats (arrow) connecting the pores abundant. Note that the solid areas represent porosity. Scale represents 500 microns (0.5 mm).*

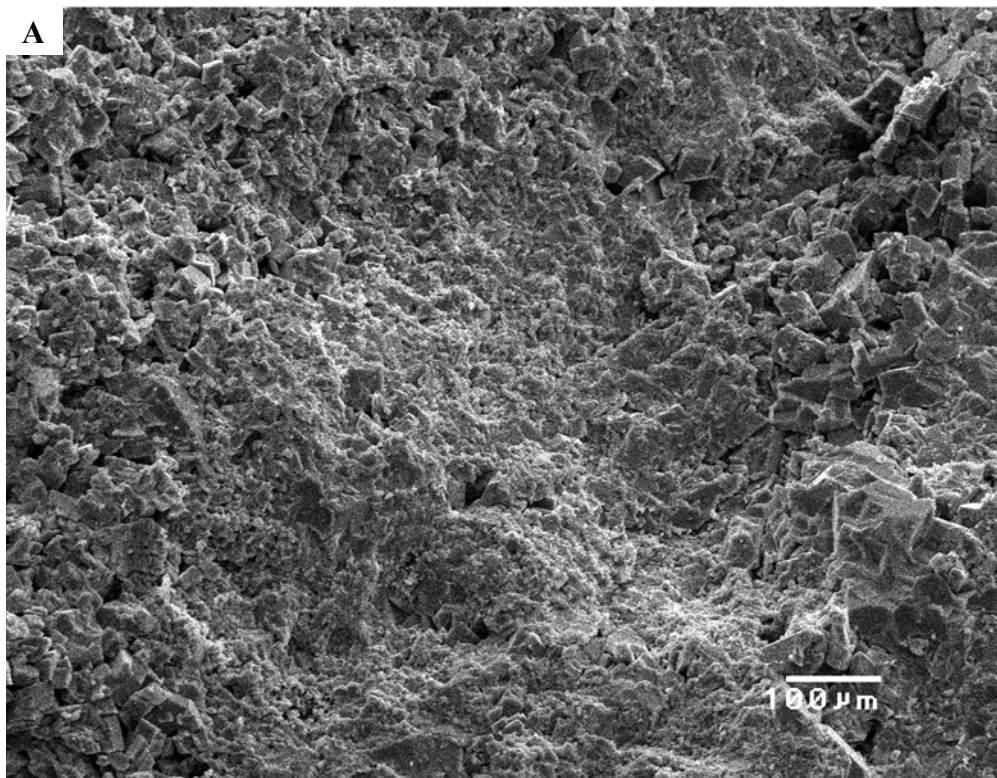
**MAY BUG 2**  
**6312.0'**



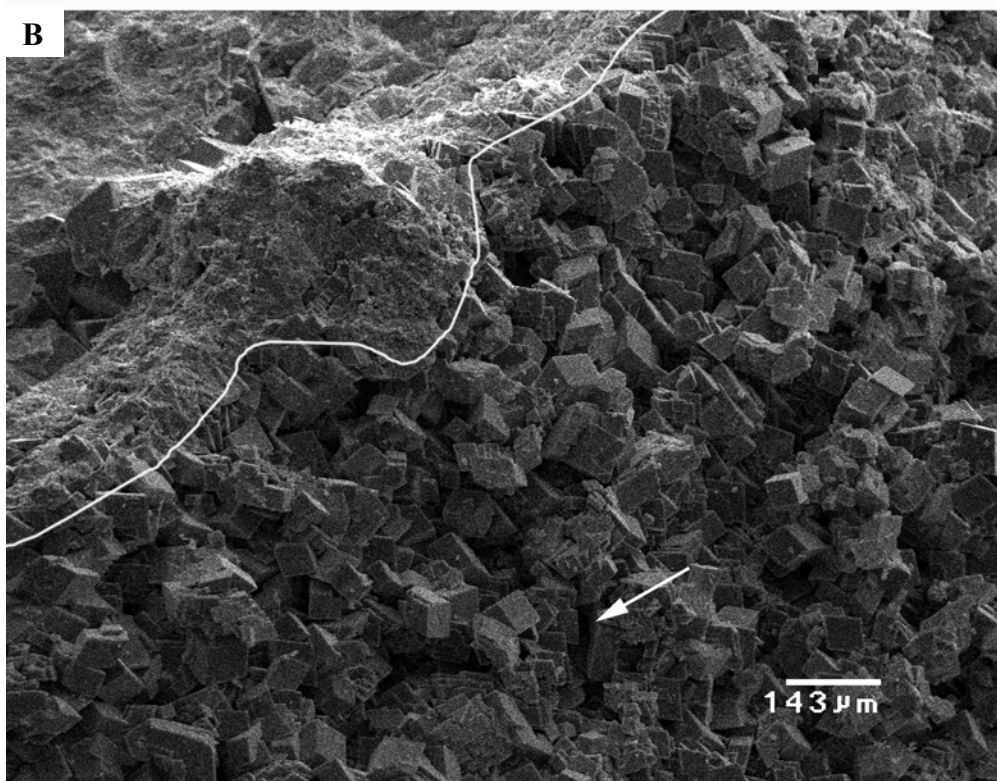
*Photomicrograph 1A. May-Bug 2. SEM photomicrograph of a core plug from 6312.0'. Dolomite with intercrystalline microporosity – BC (black). Fragments [lathes] (arrow) of dolomite represent partially dissolved dolomite rhombs present within a yellow portion of the sample. [The collapse and/or crushing of dolomite rhombs within the internal hollow dolomite sediment indicates early dolomitization and early meteoric dissolution]. Scale represents 20 microns (0.02 mm).*



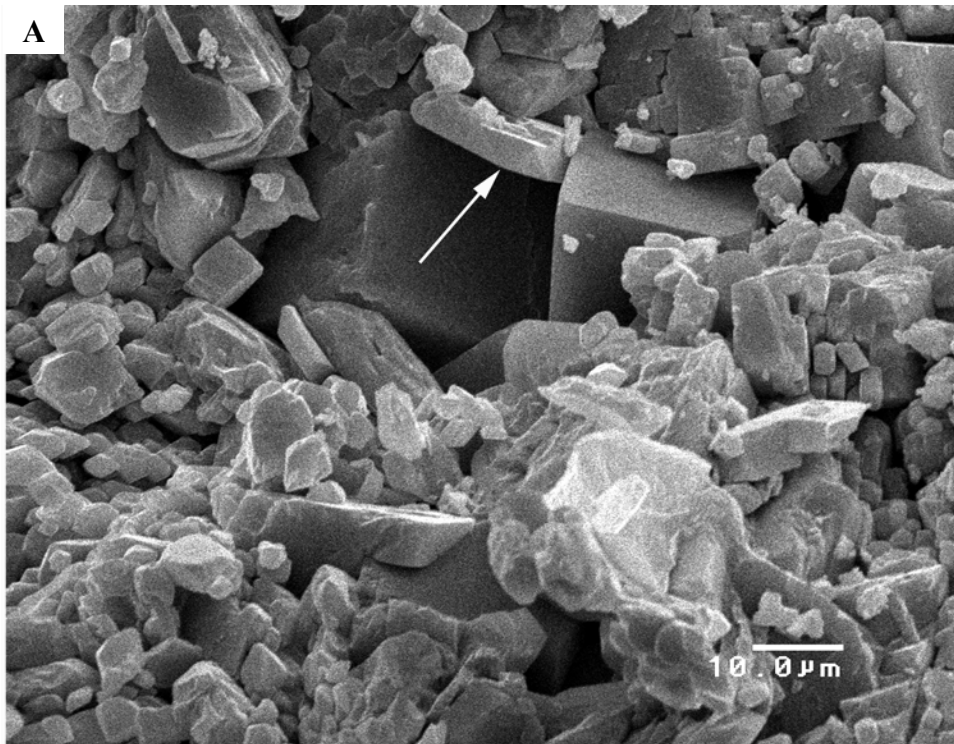
*Photomicrograph 1B. May-Bug 2. SEM photomicrograph of a core plug from 6312.0'. Enlargement showing detail of corroded, partially dissolved calcareous dolomite. Possible calcite (C) cement visible. Black is intercrystalline microporosity – BC. Scale represents 5 microns (0.005 mm).*



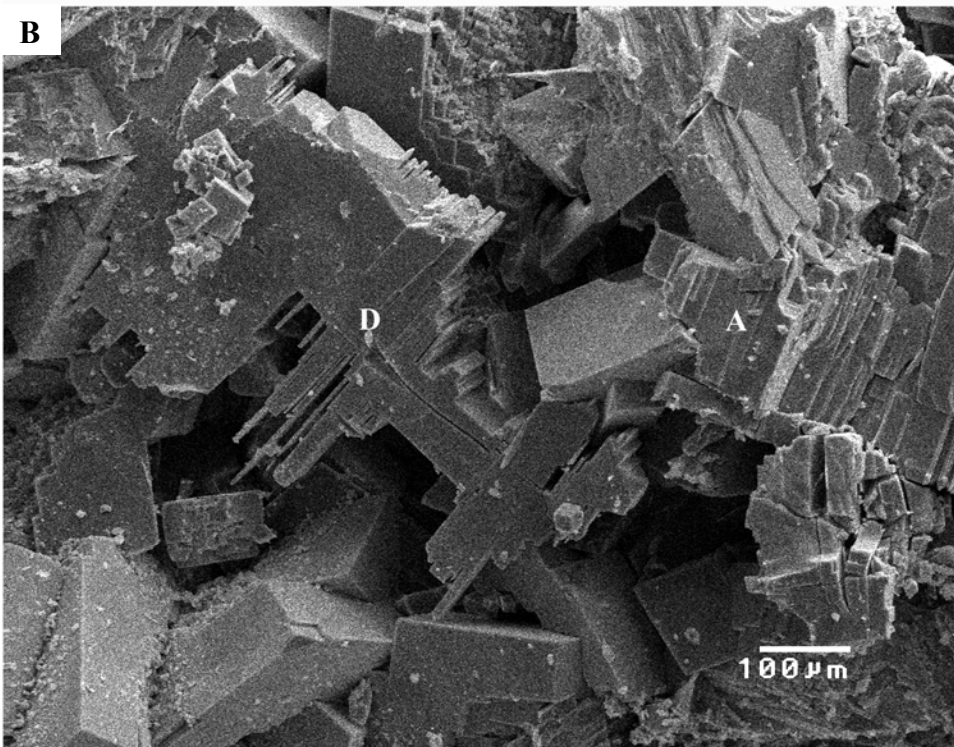
*Photomicrograph 2A. May-Bug 2. SEM photomicrograph of a core plug from 6312.0'. Central area is tight dolomitized, once aragonite, botryoidal cement. Area on right exhibits intercrystalline microporosity – BC (black). Scale represents 100 microns (0.1 mm).*



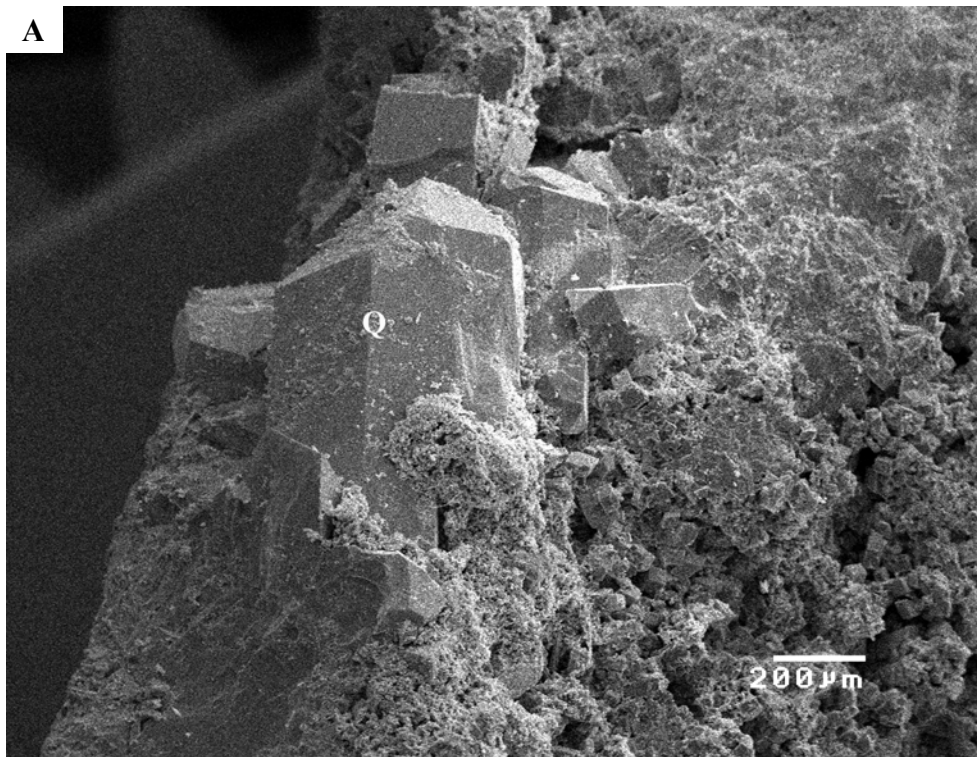
*Photomicrograph 2B. May-Bug 2. SEM photomicrograph of a core plug from 6312.0'. Contact (white line) between area of intercrystalline microporosity – BC (arrow) on the right and tightly cemented, former aragonite botryoidal cement on the left. Scale represents 143 microns (0.143 mm).*



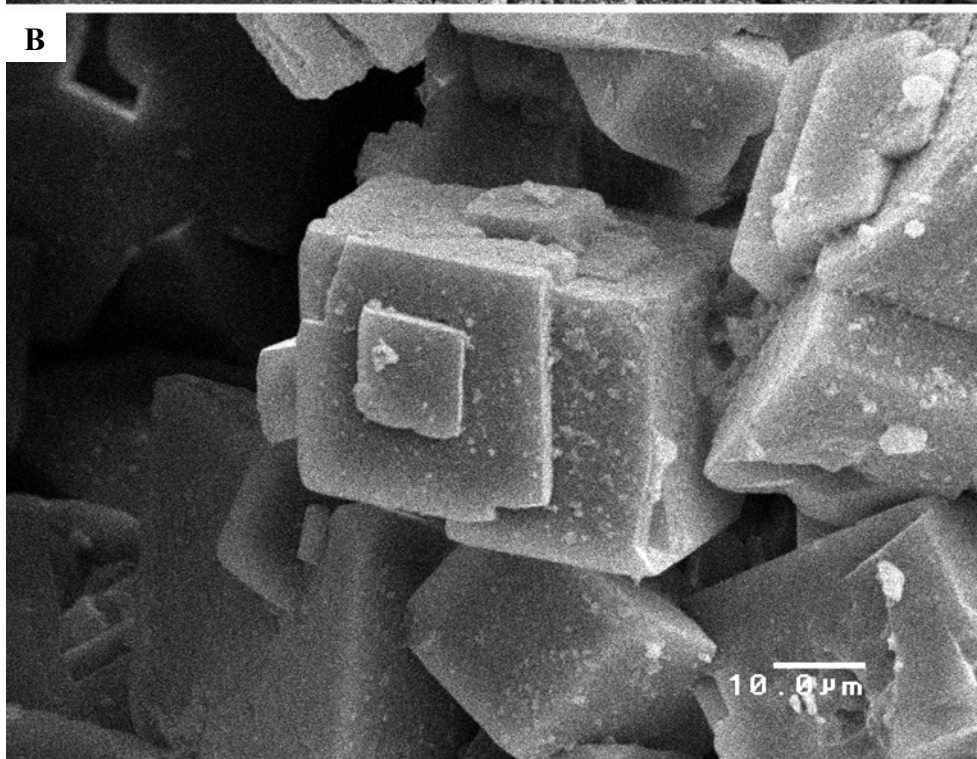
*Photomicrograph 3A. May-Bug 2. SEM photomicrograph of a core plug from 6312.0'. Enlargement showing fragments [lathes] (arrow) of dolomite within yellow sediment. [The collapse and/or crushing of dolomite rhombs within the internal hollow dolomite sediment indicates early dolomitization and early meteoric dissolution]. Scale represents 10 microns (0.01 mm).*



*Photomicrograph 3B. May-Bug 2. SEM photomicrograph of a core plug from 6312.0'. Anhydrite cement (A) intergrown with etched dolomite (D). Black is porosity. Scale represents 100 microns (0.1 mm).*

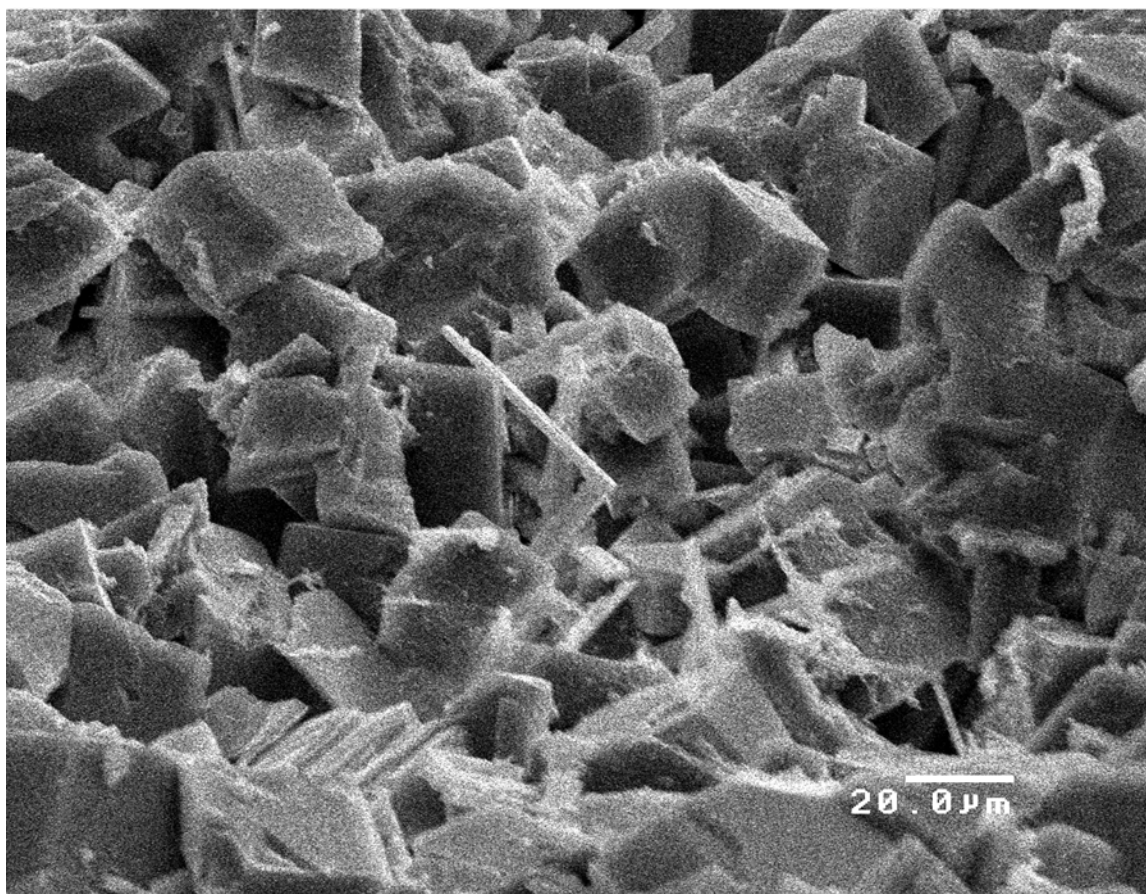


*Photomicrograph 4A.  
May-Bug 2. SEM  
photomicrograph of a  
core plug from  
6312.0'. Authigenic  
euhedral quartz (Q)  
formed within a  
mesovug – msVUG.  
Scale represents 200  
microns (0.2 mm).*

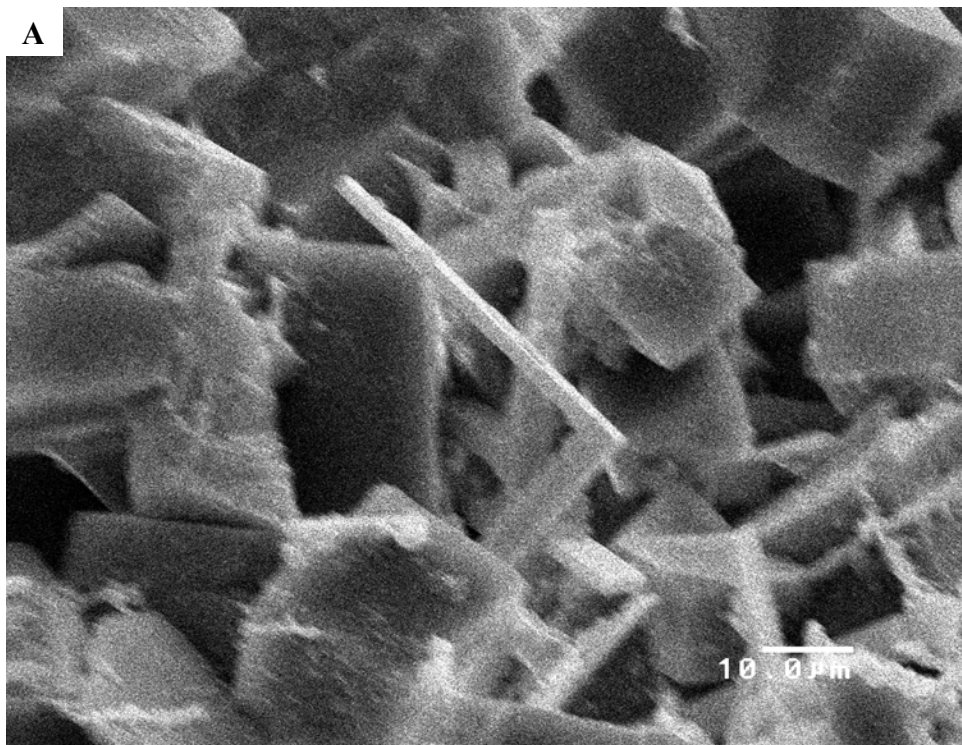


*Photomicrograph 4B.  
May-Bug 2. SEM  
photomicrograph of a  
core plug from  
6312.0'.  
Enlargement  
showing a zoned  
dolomite rhomb.  
Intercrystalline  
mesoporosity – BC  
(black) is visible  
among the rhombs.  
Scale represents 10  
microns (0.01mm).*

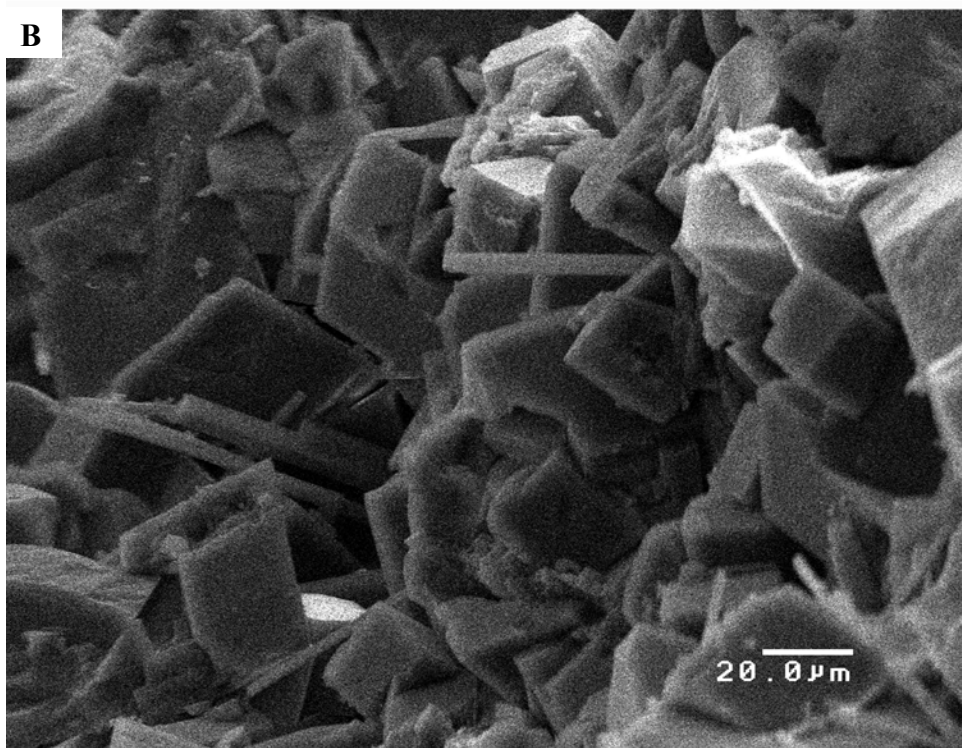
**MAY-BUG 2**  
**6315.0'**



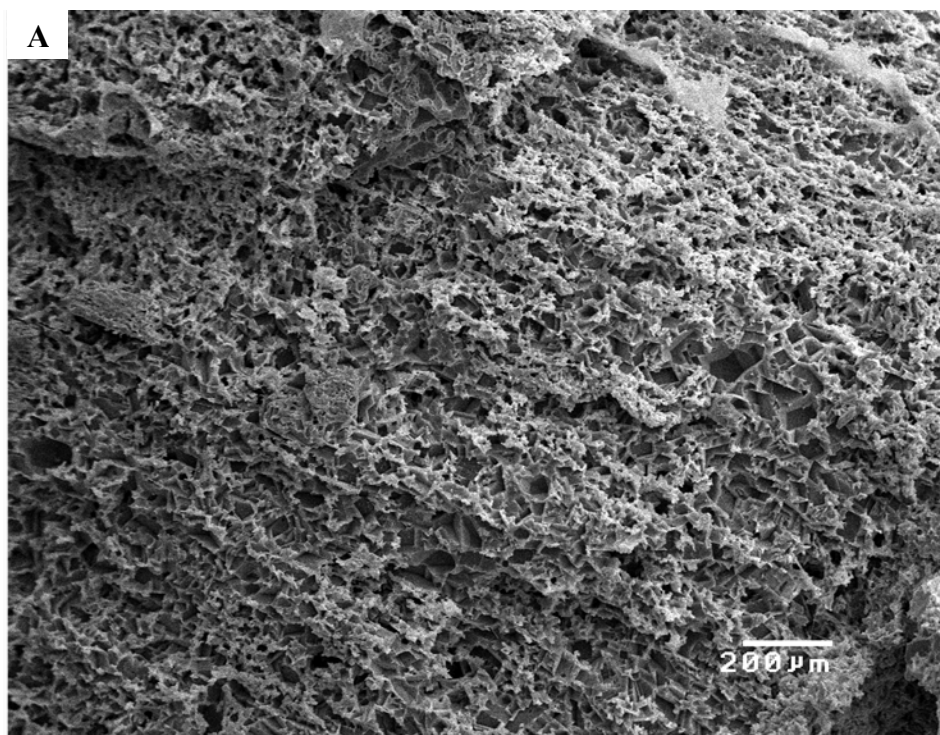
*Photomicrograph 1. May-Bug 2. SEM photomicrograph of a core plug from 6315.0' showing detail of intercrystalline microporosity. Scale represents 20 microns (0.02 mm).*



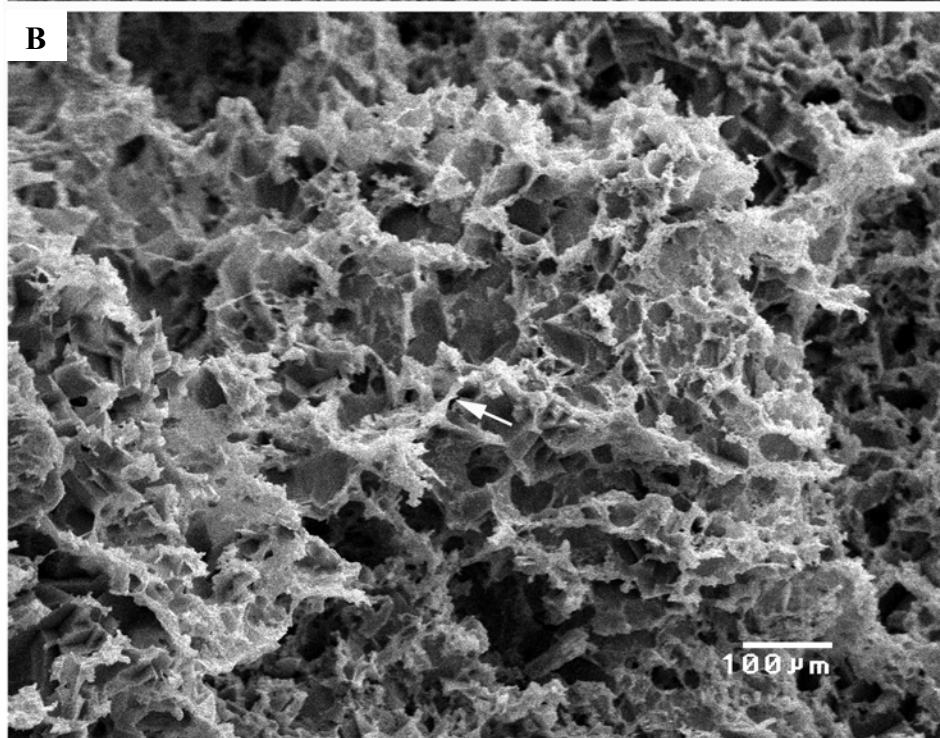
*Photomicrograph  
2A. May-Bug 2.  
SEM  
photomicrograph of  
a core plug from  
6315.0'.  
Enlargement  
showing detail of  
the lath near the  
center of  
photomicrograph 1.  
Scale represents 10  
microns (0.01 mm).*



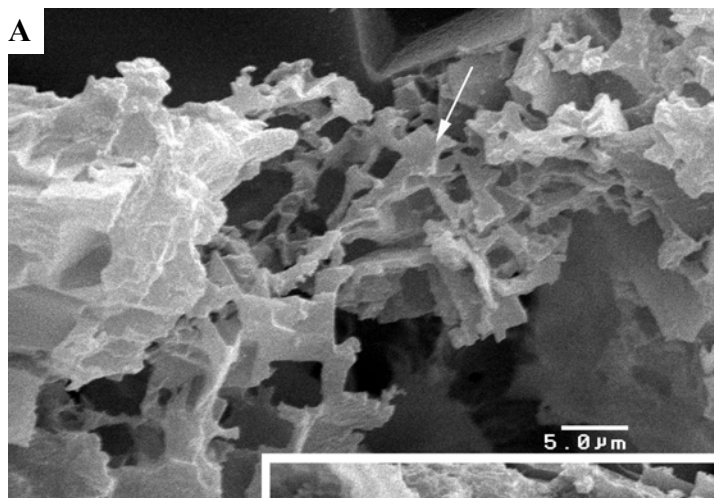
*Photomicrograph  
2B. May-Bug 2.  
SEM  
photomicrograph of  
a core plug from  
6315.0'.  
Enlargement  
showing dolomite  
lathes within the  
sample . [The  
collapse and/or  
crushing of dolomite  
rhombs within the  
internal hollow  
dolomite sediment  
indicates early  
dolomitization and  
early meteoric  
dissolution]. Scale  
represents 20  
microns (0.02 mm).*



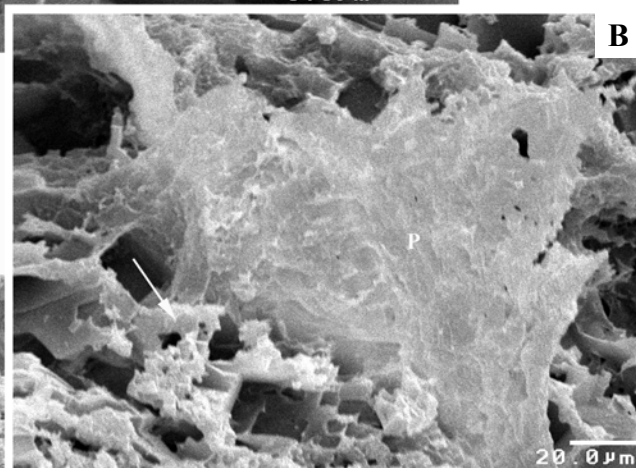
*Photomicrograph 3A. May-Bug 2. SEM photomicrograph of a pore cast from 6315.0'. Diagonal linear (laminae?) pattern in an area of intercrystalline micro- and mesoporosity – BC. [The collapse and/or crushing of dolomite rhombs within the internal hollow dolomite sediment indicates early dolomitization and early meteoric dissolution.] Note that the solid areas represent porosity. Scale represents 200 microns (0.2 mm).*



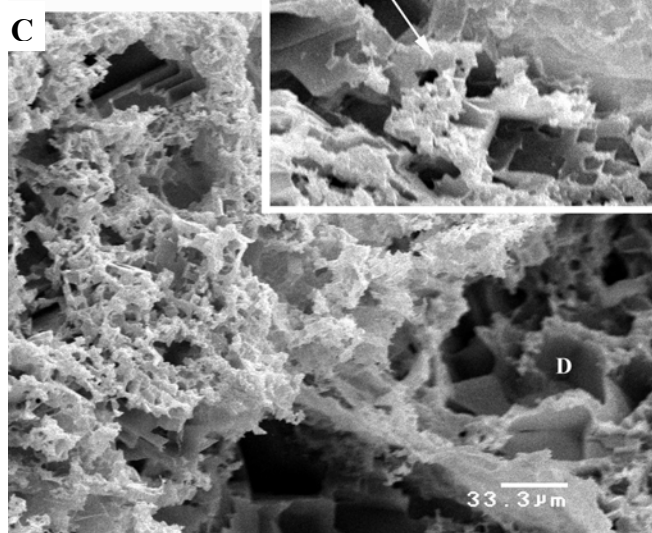
*Photomicrograph 3B. May-Bug 2. SEM photomicrograph of a pore cast from 6315.0'. Intercrystalline microporosity – BC with abundant small pore throats (arrow) indicating good connectivity. Note that the solid areas represent porosity. Scale represents 100 microns (0.1 mm).*



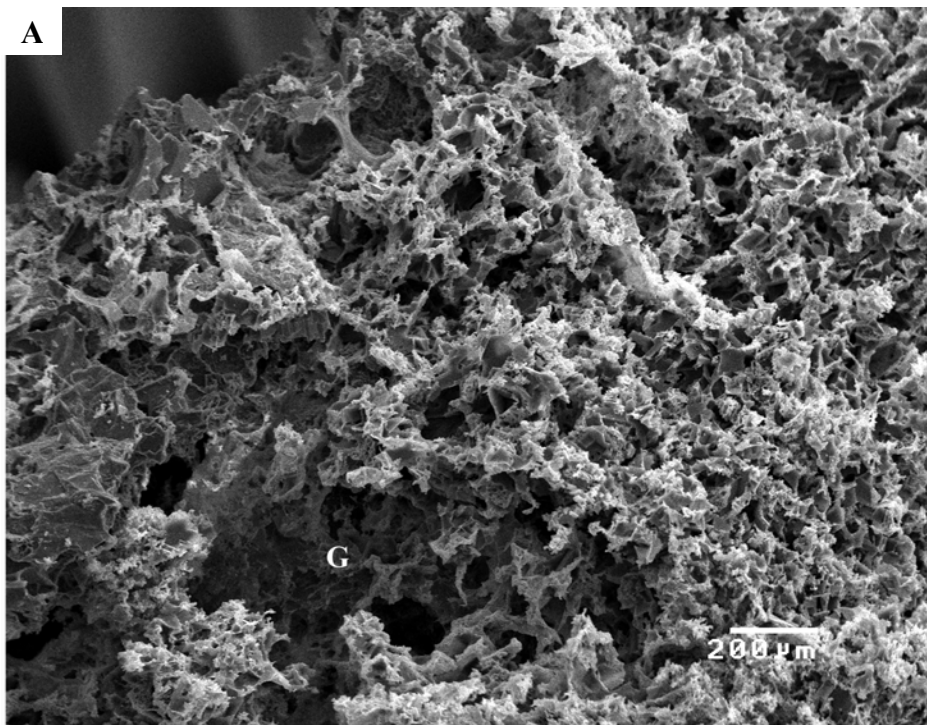
**Photomicrograph 4A. May-Bug 2. SEM photomicrograph of a pore cast from 6315.0'. Enlargement of a massive area of interconnected intercrystalline micropores – BC (arrow). Note that the solid areas represent porosity. Scale represents 5 microns (0.005 mm).**



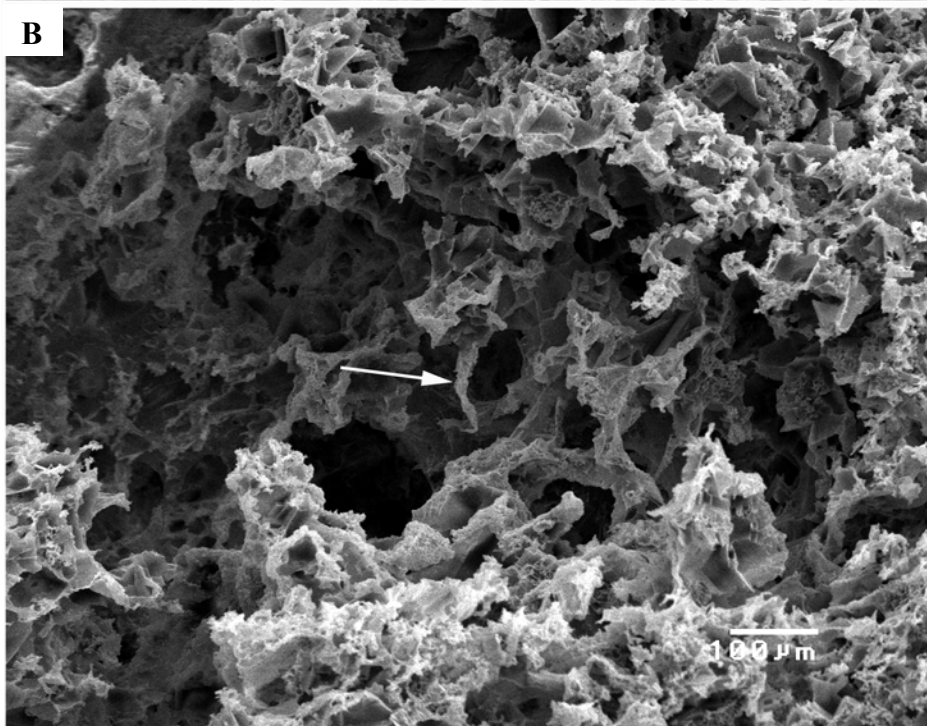
**Photomicrograph 4B. May-Bug 2. SEM photomicrograph of a pore cast from 6315.0'. Mesopore –MO (P) connected to intercrystalline microporosity – BC by narrow pore throats (arrow). [This demonstrates possible anisotropic permeability, perhaps captured by horizontal drilling.] Note that the solid areas represent porosity. Scale represents 20 microns (0.02 mm).**



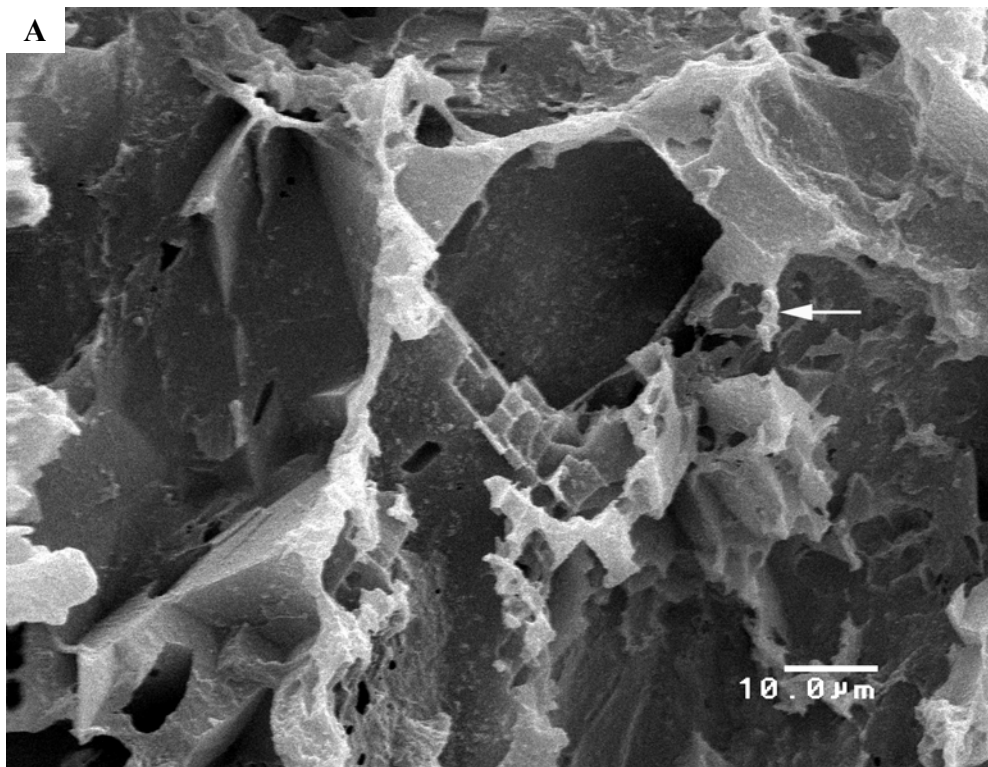
**Photomicrograph 4C. May-Bug 2. SEM photomicrograph of a pore cast from 6315.0' showing branching intergranular microporosity – BC. Dolomite rhomb impression (D) visible. Note that the solid areas represent porosity. Scale represents 33.3 microns (0.0333 mm).**



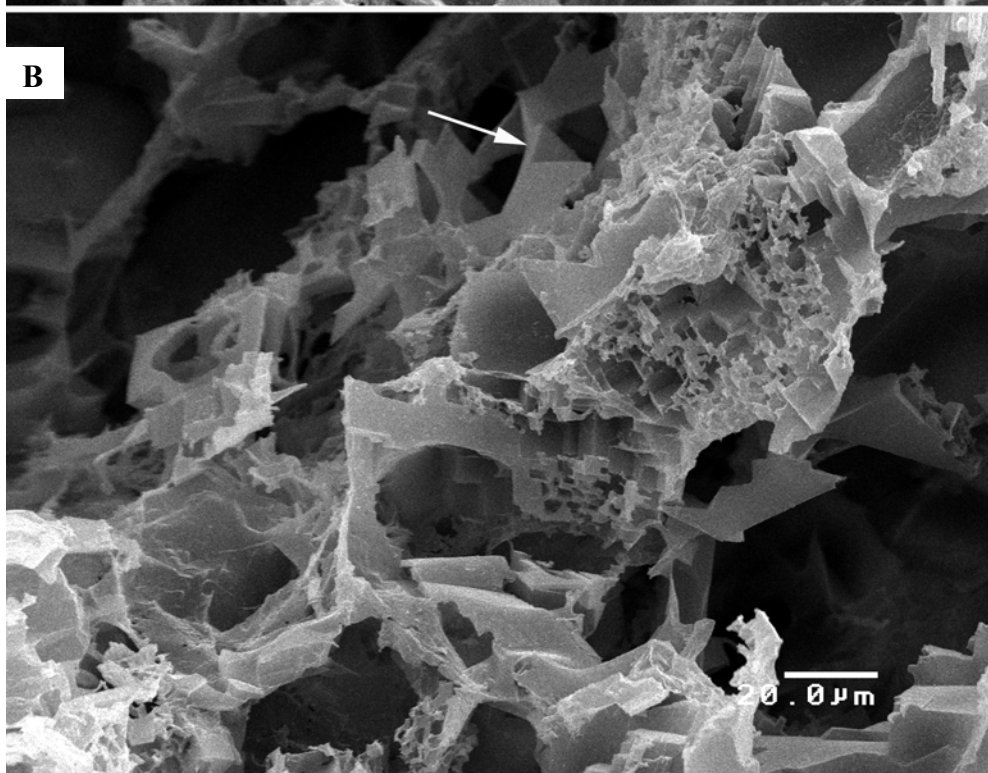
**Photomicrograph 5A.**  
**May-Bug 2. SEM**  
**photomicrograph of a**  
**pore cast from 6315.0'.**  
**Linear pattern that may**  
**represent laminae or**  
**algal fronds.**  
**Intercrystalline**  
**microporosity – BC**  
**present among grains**  
**(G). Note that the solid**  
**areas represent**  
**porosity. Scale**  
**represents 200 microns**  
**(0.2 mm).**



**Photomicrograph 5B.**  
**May-Bug 2. SEM**  
**photomicrograph of a**  
**pore cast from 6315.0'.**  
**Enlargement of the**  
**grain from 3A showing**  
**abundant “dead end”**  
**pore throats (arrow).**  
**Note that the solid**  
**areas represent**  
**porosity. Scale**  
**represents 100 microns**  
**(0.1 mm).**

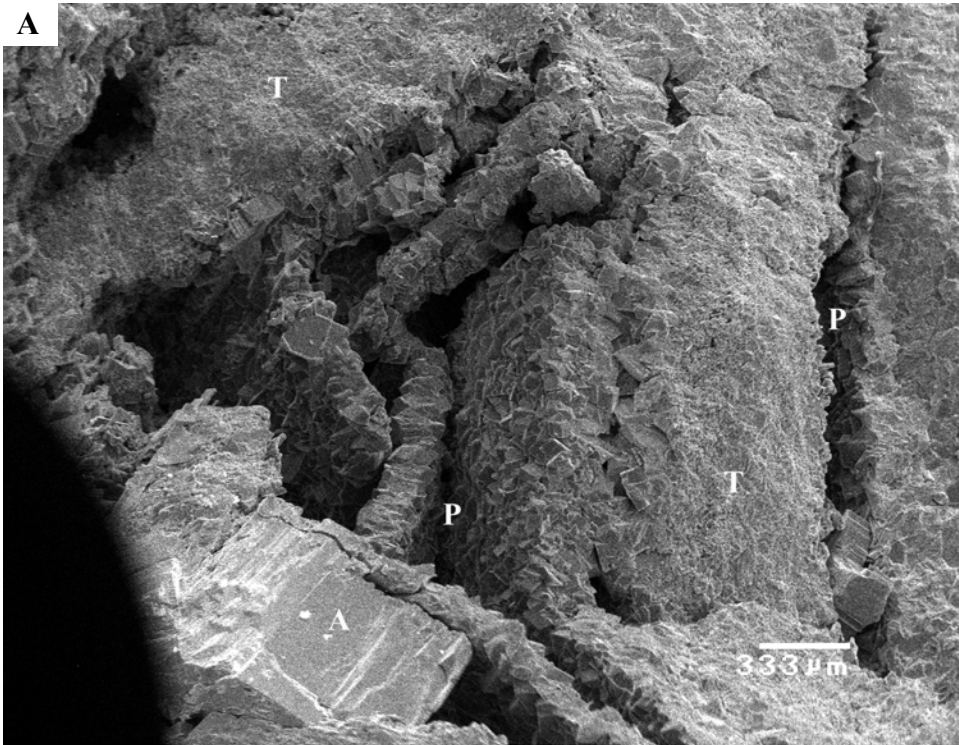


**Photomicrograph 6A. May-Bug 2. SEM photomicrograph of a pore cast from 6315.0'. Enlargement of the grain from 3A showing abundant "dead end" pore throats (arrow). Note that the solid areas represent porosity. Scale represents 10 microns (0.01 mm).**

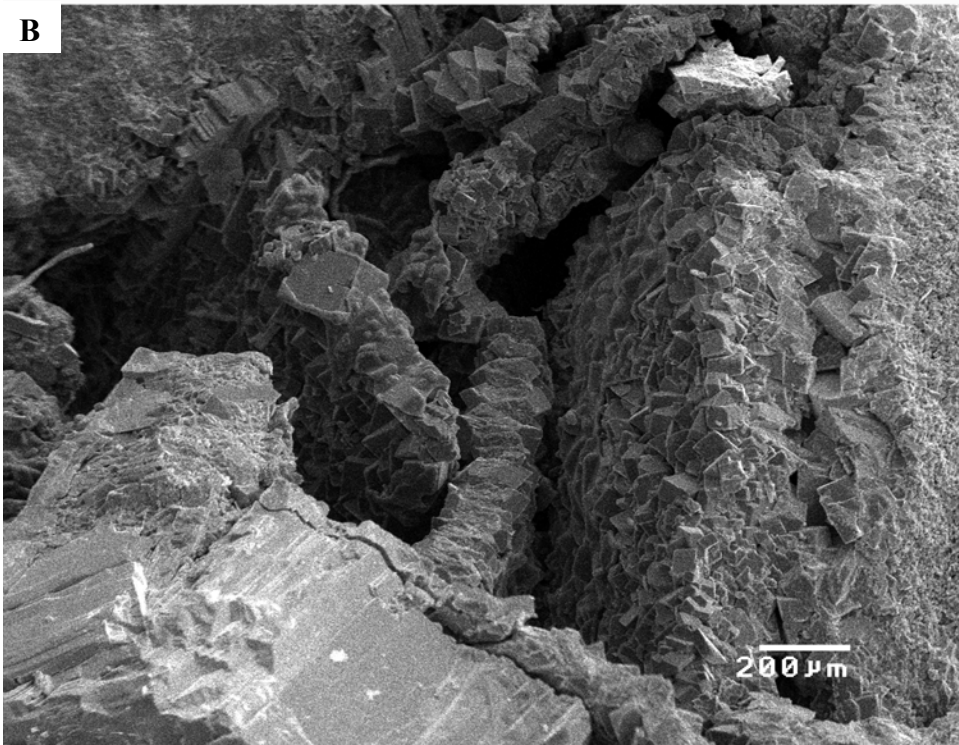


**Photomicrograph 6B. May-Bug 2. SEM photomicrograph of a pore cast from 6315.0'. Intercrystalline microporosity – BC in a waffle griddle fabric. Pore throats (arrow) indicate good connectivity. Note that the solid areas represent porosity. Scale represents 20 microns (0.02 mm).**

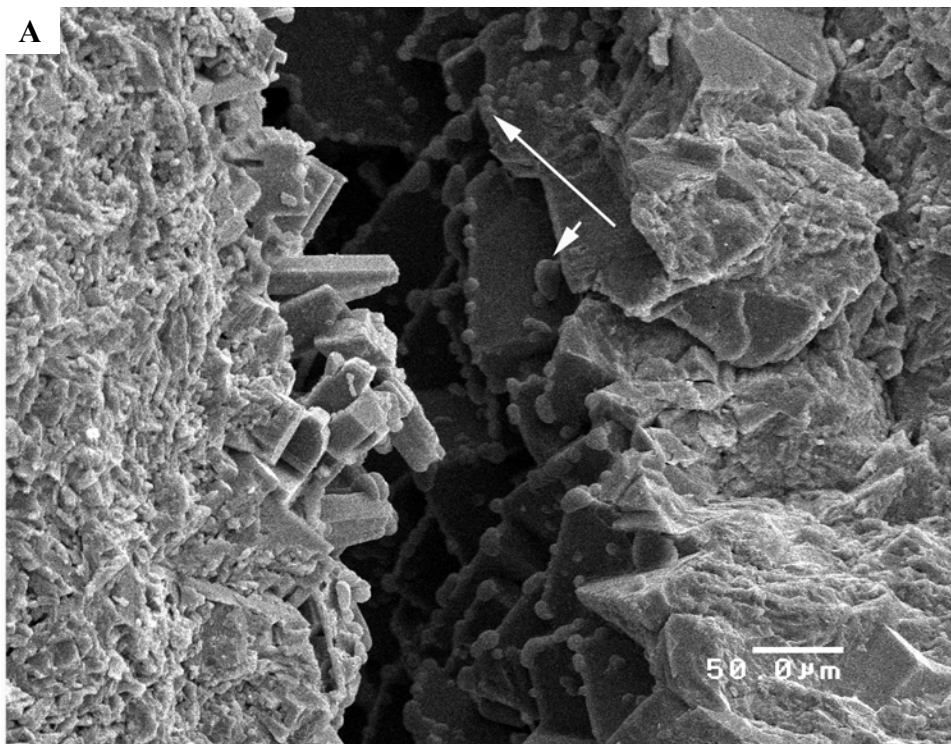
**BUG 4  
6289.7'**



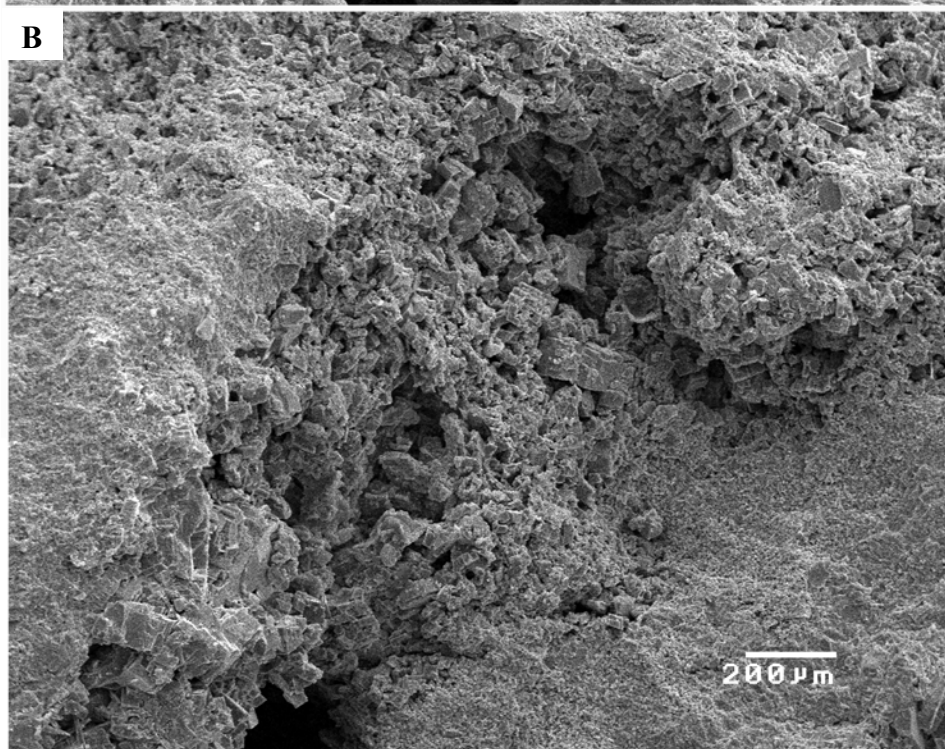
**Photomicrograph 1A.**  
**Bug 4. SEM**  
**photomicrograph of a**  
**core plug from**  
**6289.7'. Dissolution**  
**mesoporosity – MO (P)**  
**resulting from**  
**dissolution of phylloid**  
**algae fronds.**  
**Elongated tight areas**  
**(T) are dolomitized,**  
**once aragonite,**  
**isopachous cements**  
**originally deposited**  
**along the algal fronds.**  
**Anhydrite cement (A)**  
**visible in lower left.**  
**Scale represents 333**  
**microns (0.333 mm).**



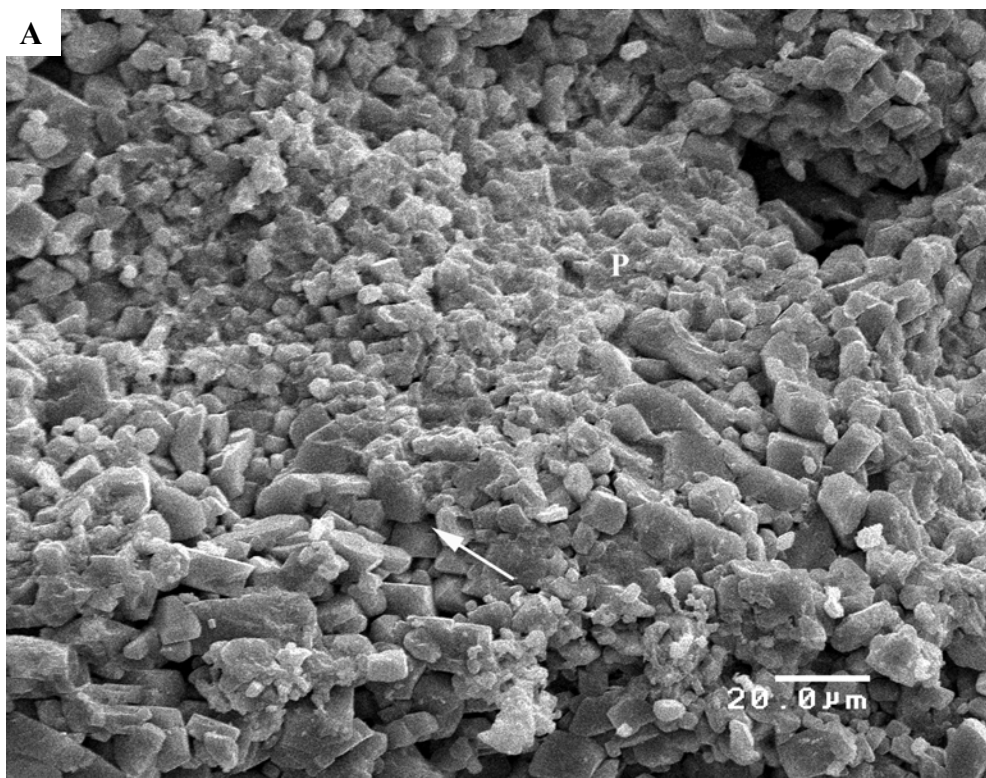
**Photomicrograph 1B.**  
**Bug 4. SEM**  
**photomicrograph of a**  
**core plug from**  
**6289.7'. Same view as**  
**1A, slightly enlarged.**  
**Scale represents 200**  
**microns (0.2 mm).**



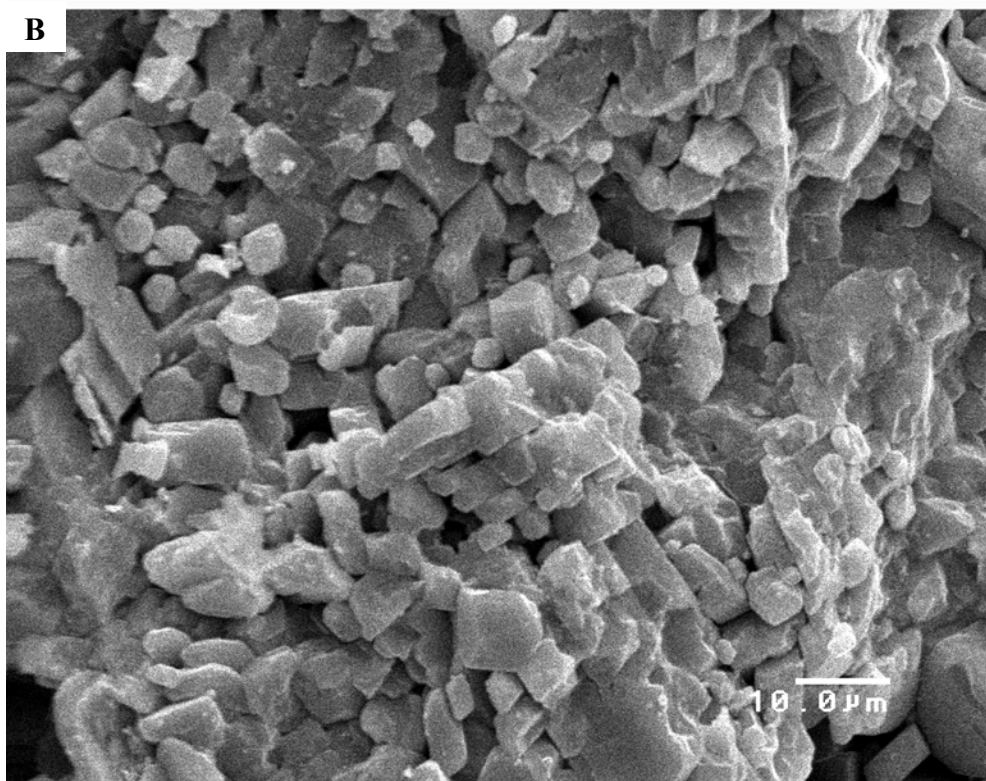
*Photomicrograph 2A. Bug 4. SEM photomicrograph of a core plug from 6289.7'. Enlargement of a dissolution mesopore – MO showing dolomitized former aragonite cement on the left and pyrobitumen (arrows) on the dolomite lining the pore. Scale represents 50 microns (0.05 mm).*



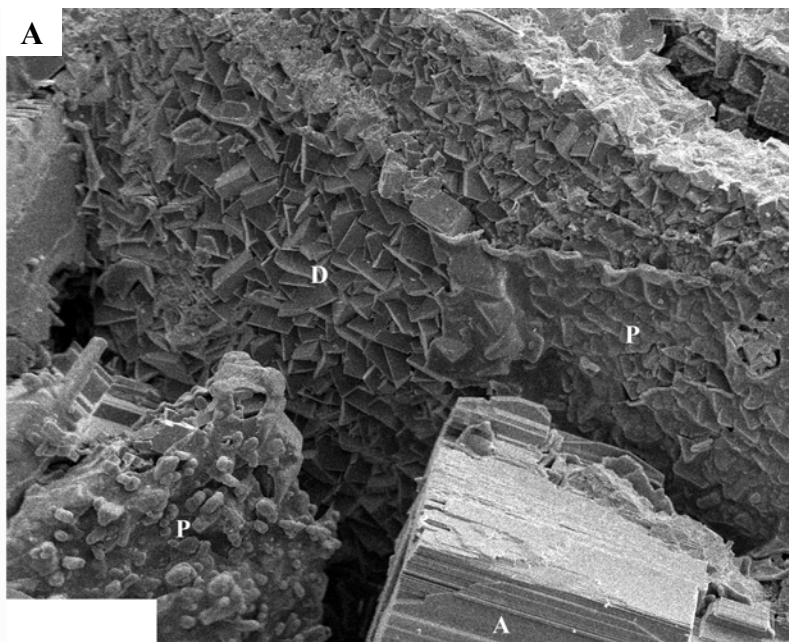
*Photomicrograph 2B. Bug 4. SEM photomicrograph of a core plug from 6289.7'. Possible remnant lineations in dolomitized botryoidal cement. This isopachous cement formed adjacent to a phylloid algal frond. Scale represents 200 microns (0.2 mm).*



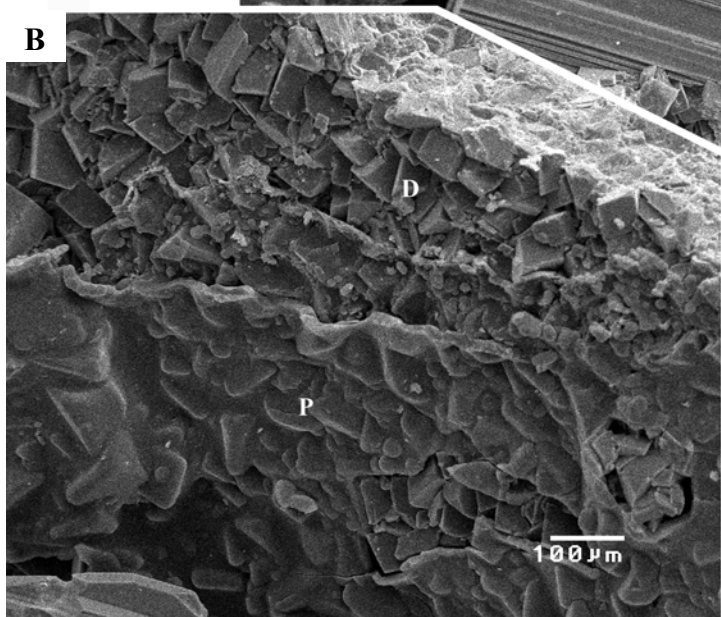
*Photomicrograph 3A. Bug 4. SEM photomicrograph of a core plug from 6289.7'. Dolomite coated with pyrobitumen (P). Note how the pyrobitumen blocks the intercrystalline microporosity – BC (arrow) to reduce permeability. Scale represents 20 microns (0.02 mm).*



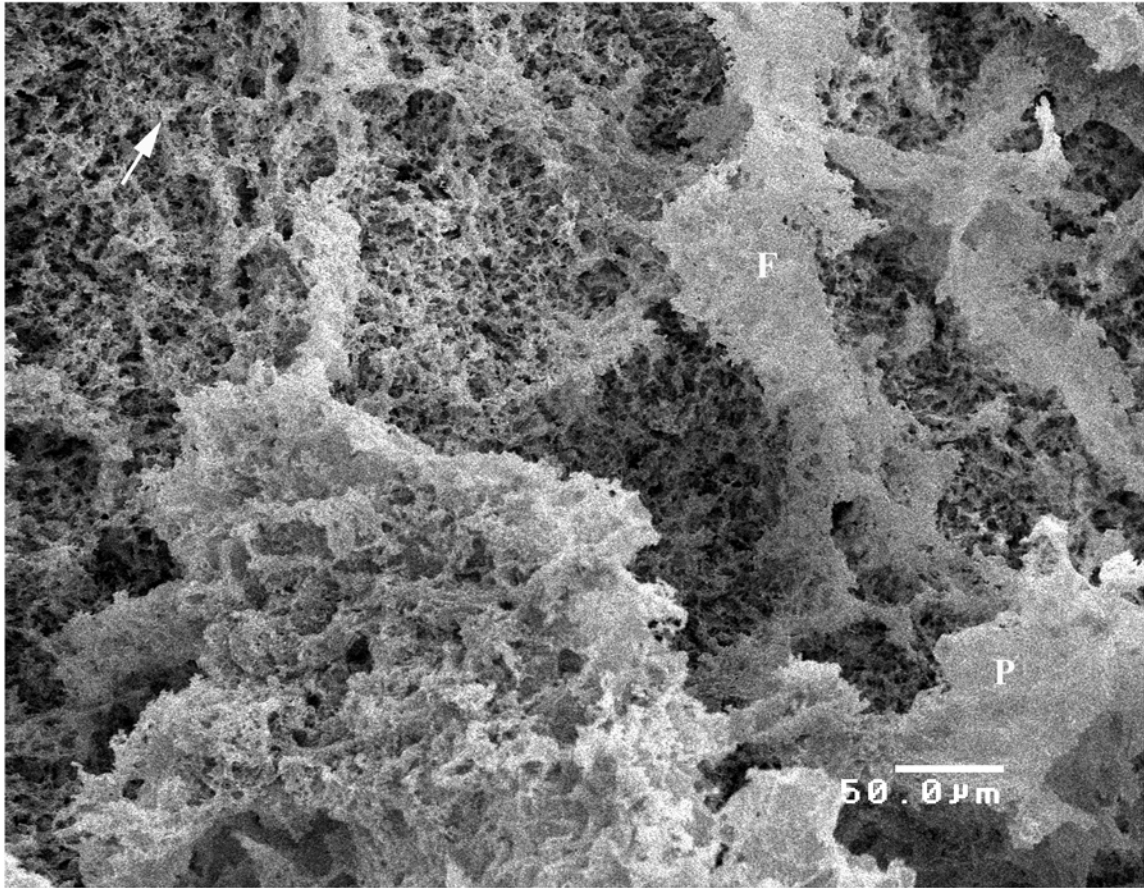
*Photomicrograph 3B. Bug 4. SEM photomicrograph of a core plug from 6289.7'. Enlargement showing detail of corroded dolomite rhombs that reflect an intercrystalline microporosity – BC boxwork fabric. Porosity is black. Scale represents 10 microns (0.01 mm).*



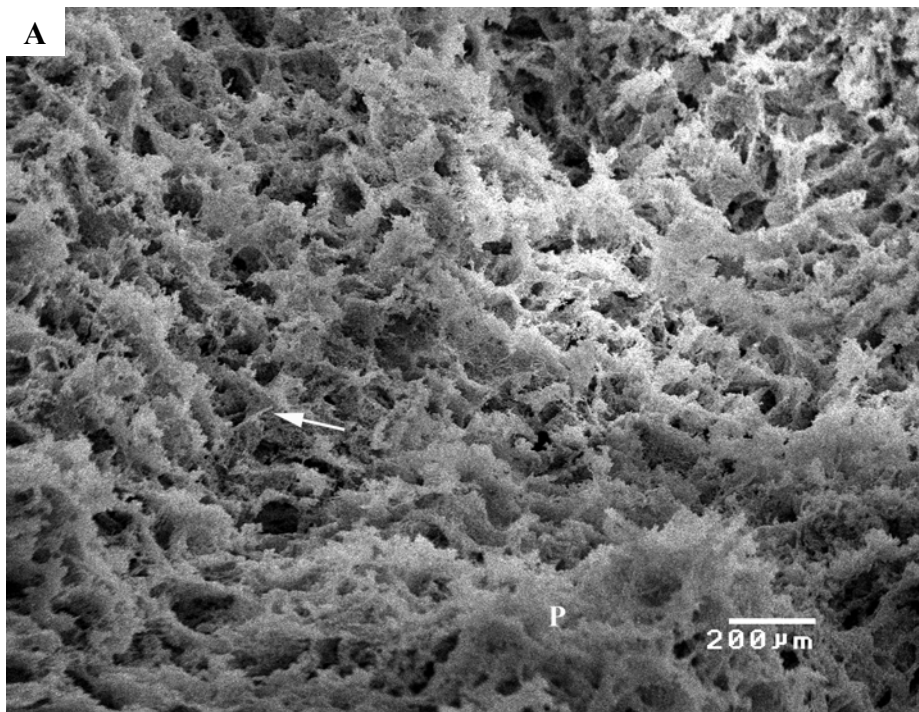
*Photomicrograph 4A. Bug 4. SEM photomicrograph of a core plug from 6289.7'. Clean dolomite (D), pyrobitumen-coated dolomite (P), and anhydrite (A) within a dissolution mesopore – MO. The pore was formed by dissolution of an algal frond. Scale represents 200 microns (0.2 mm).*



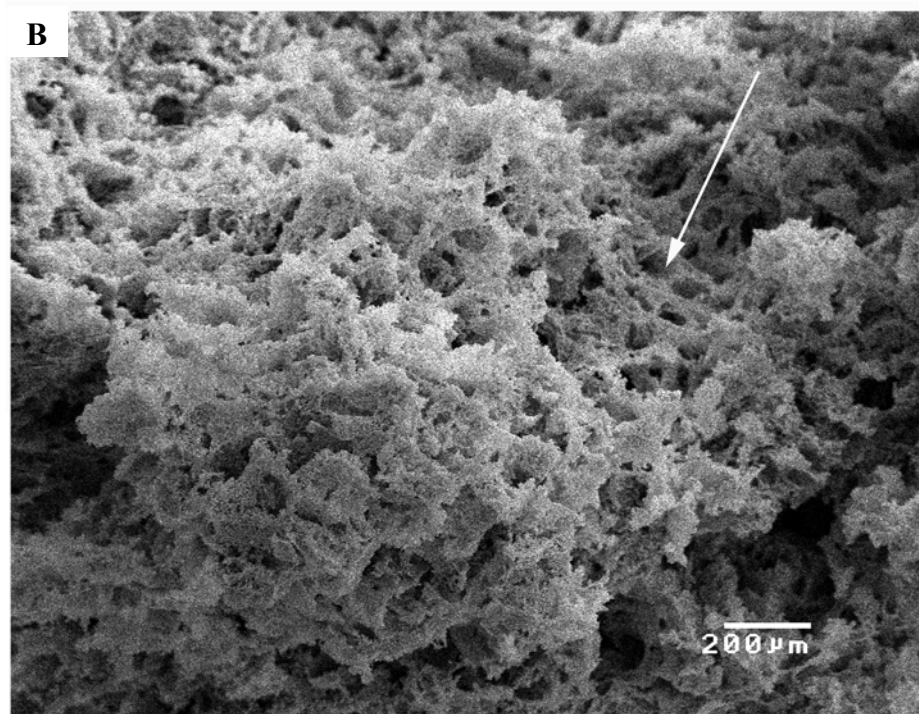
*Photomicrograph 4B. Bug 4. SEM photomicrograph of a core plug from 6289.7'. enlargement of the non-coated dolomite (D) and pyrobitumen coated dolomite (P) from 3A. Scale represents 100 microns (0.1 mm).*



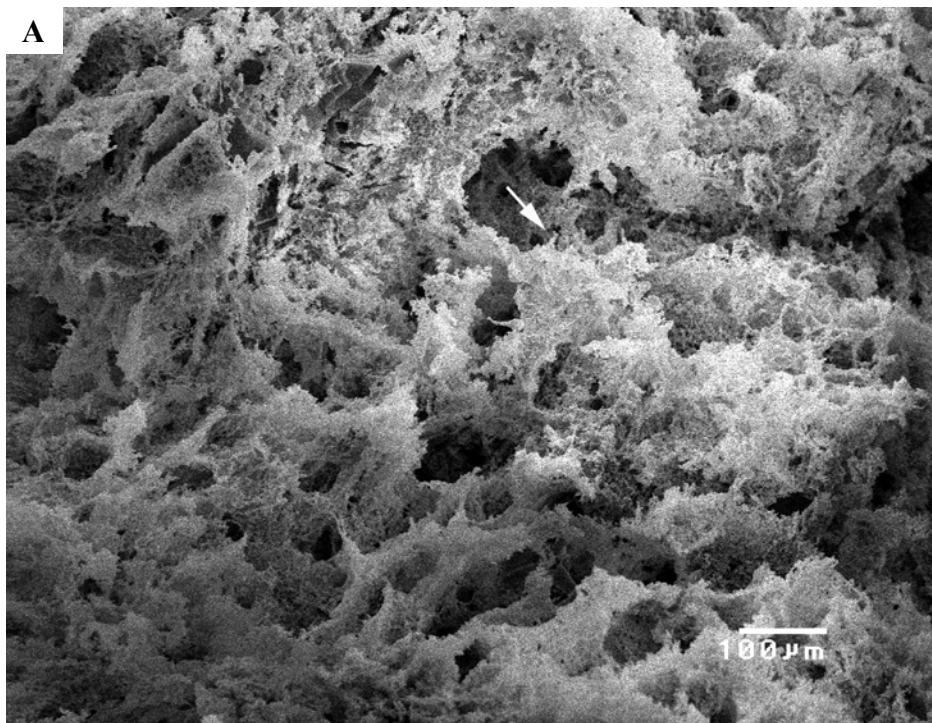
*Photomicrograph 5. Bug 4. SEM photomicrograph of a pore cast from 6289.7' Dissolution mesopores – MO (P), intercrystalline micropores – BC (arrow), and microfractures (F) in dolomite. Note that the solid areas represent porosity. Scale represents 50 microns (0.05 mm).*



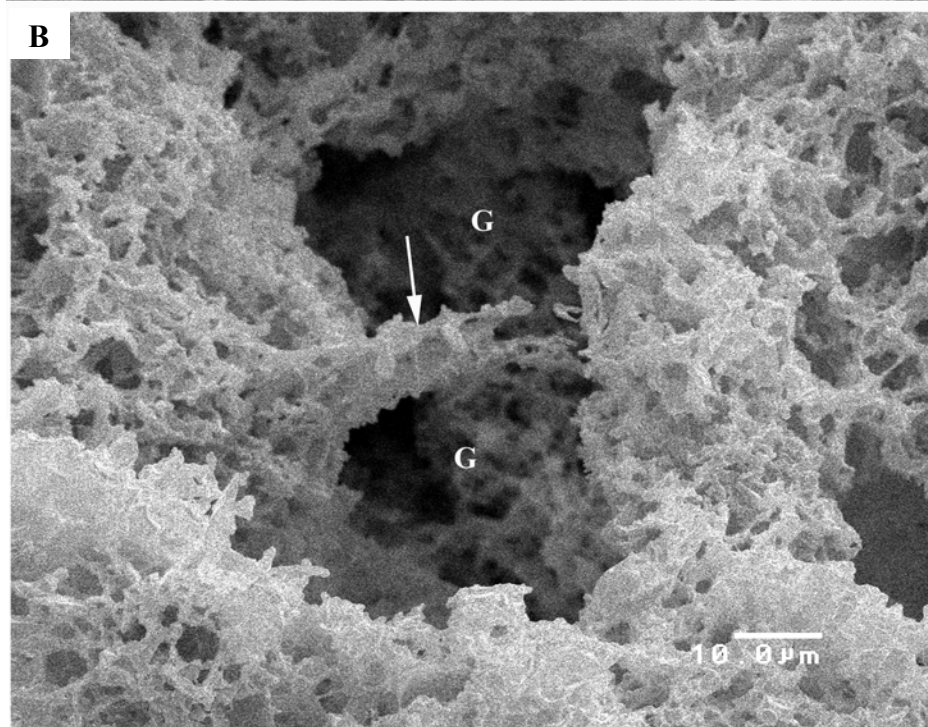
*Photomicrograph 6A.  
Bug 4. SEM  
photomicrograph of a  
pore cast from 6289.7'.  
Intercrystalline  
microporosity – BC with  
“dead end” pore throats  
(arrow). Dissolution  
mesopore – MO (P)  
visible in lower right.  
Note that the solid areas  
represent porosity.  
Scale represents 200  
microns (0.2 mm).*



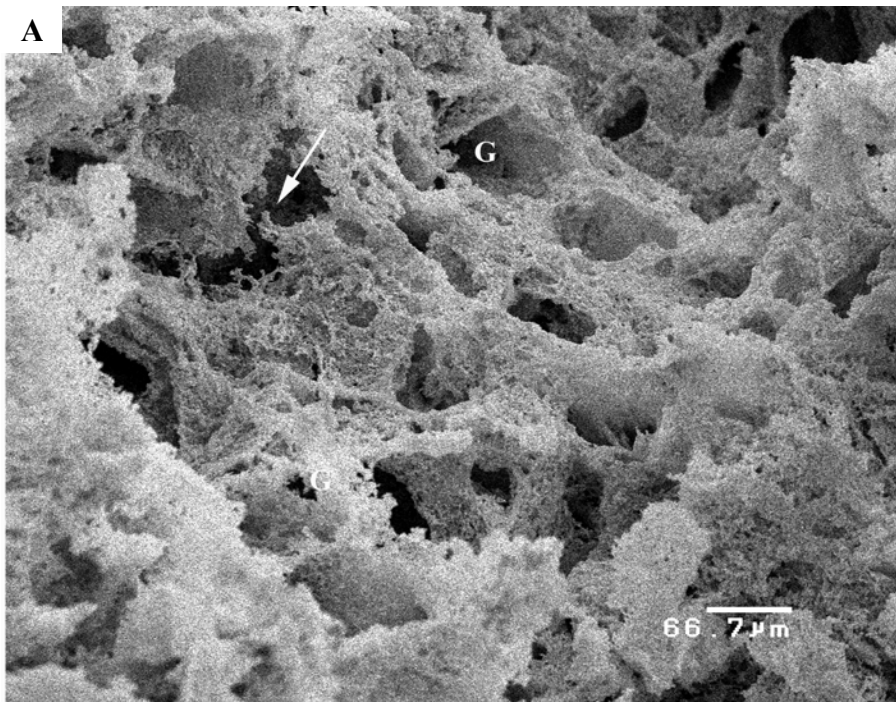
*Photomicrograph 6B.  
Bug 4. SEM  
photomicrograph of a  
pore cast from 6289.7'.  
Intercrystalline  
microporosity – BC in a  
reverse waffle griddle  
fabric (arrow). Note that  
the solid areas represent  
porosity. Scale  
represents 200 microns  
(0.2 mm).*



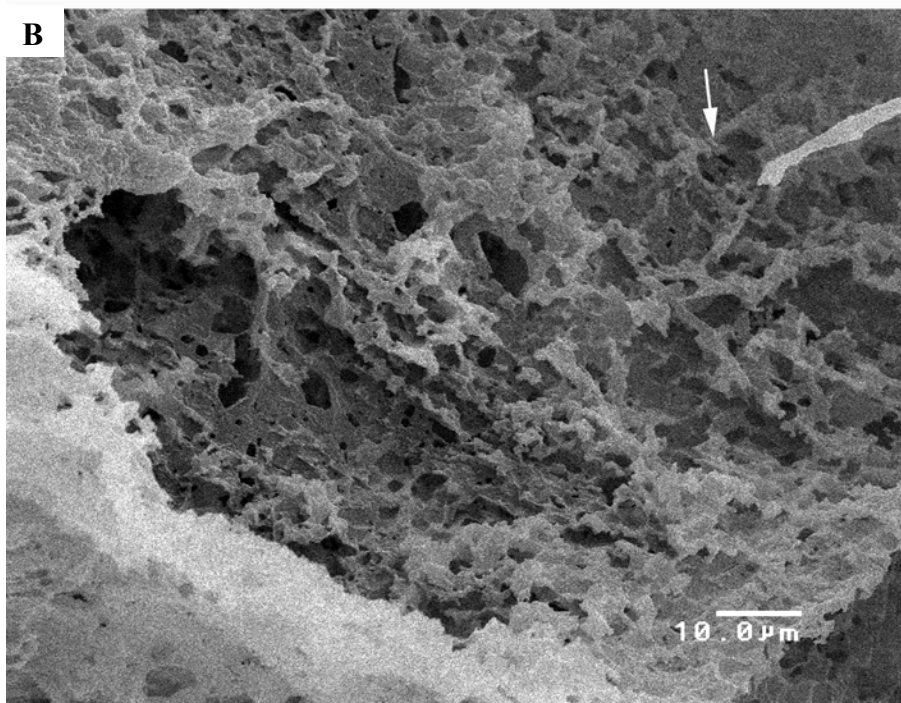
**Photomicrograph 7A.**  
**Bug 4. SEM**  
 photomicrograph of a  
 pore cast from 6289.7'  
 Network of  
 intercrystalline  
 microporosity – BC  
 (upper right) merging  
 to intercrystalline  
 mesoporosity – BC  
 (lower left). “Dead  
 end” pore throats  
 (arrow) abundant.  
 Note that the solid  
 areas represent  
 porosity. Scale  
 represents 100 microns  
 (0.1 mm).



**Photomicrograph 7B.**  
**Bug 4. SEM**  
 photomicrograph of a  
 pore cast from 6289.7'  
 Enlargement showing  
 detail of a pore throat  
 (arrow) formed  
 between two grains  
 (G). The pore throat  
 connects the areas of  
 porosity, but is smaller  
 at the right connection.  
 Note that the solid  
 areas represent  
 porosity. Scale  
 represents 10 microns  
 (0.01 mm).

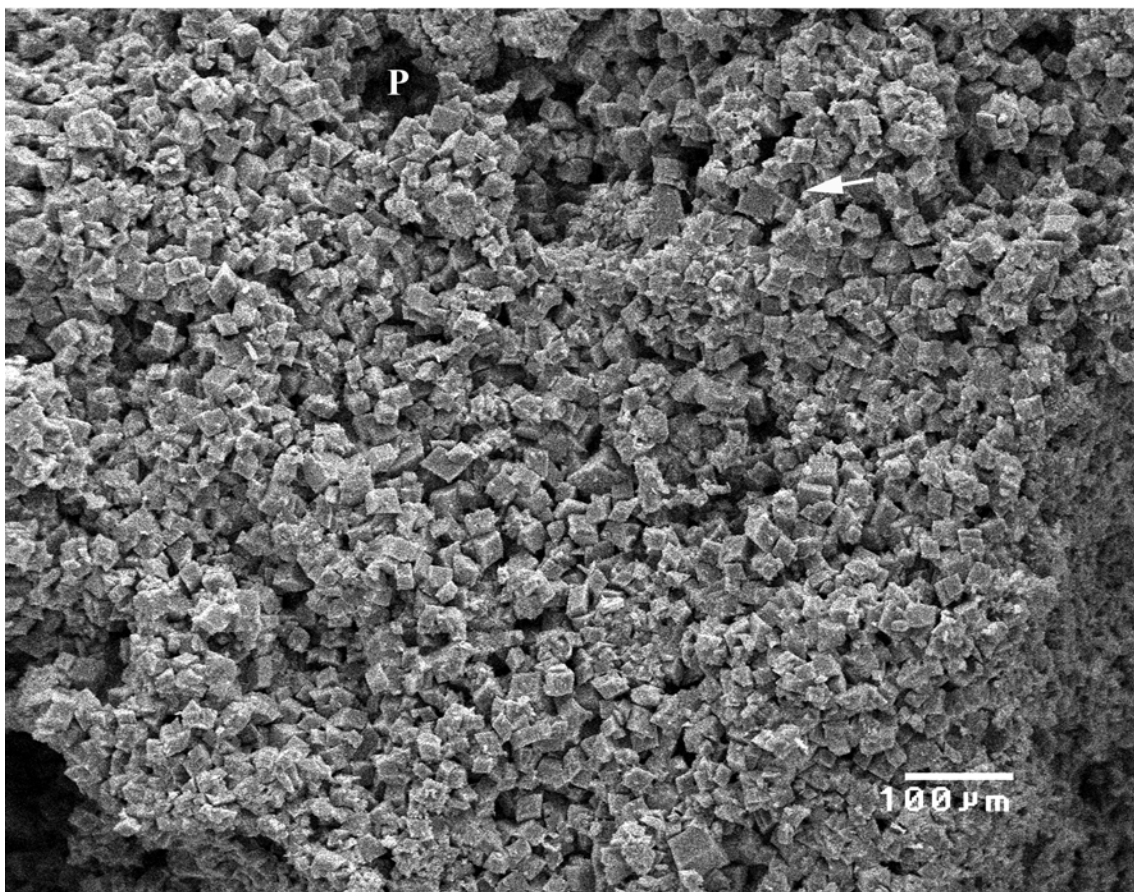


**Photomicrograph 8A.**  
**Bug 4. SEM**  
 photomicrograph of a pore cast from 6289.7'. Intercrystalline micro- and mesoporosity among tight grains (G), forming a waffle grid fabric. Some "dead end" pore throats (arrow) protrude into the grains. Note that the solid areas represent porosity. Scale represents 66.7 microns (0.067 mm).

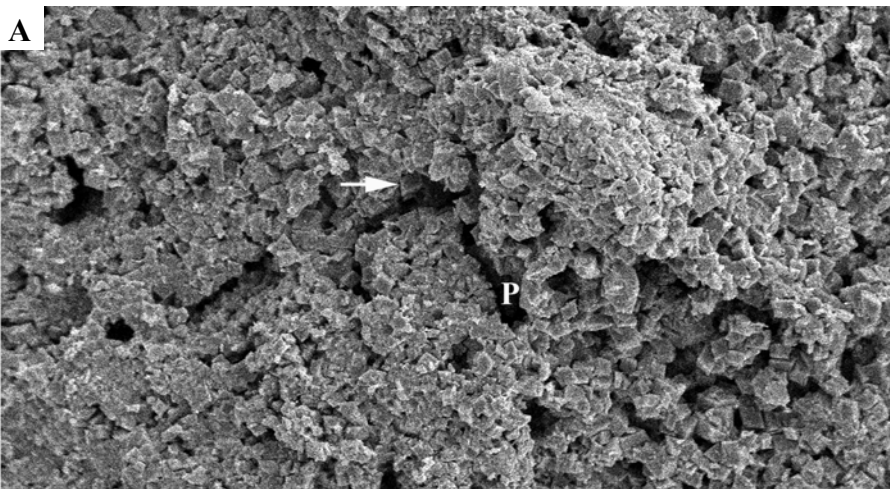


**Photomicrograph 8B.**  
**Bug 4. SEM**  
 photomicrograph of a pore cast from 6289.7'. Boxwork porosity fabric (arrow) and possible botryoidal cement (upper right). The light linear feature in the upper right is a contaminant. Note that the solid areas represent porosity. Scale represents 10 microns (0.01 mm).

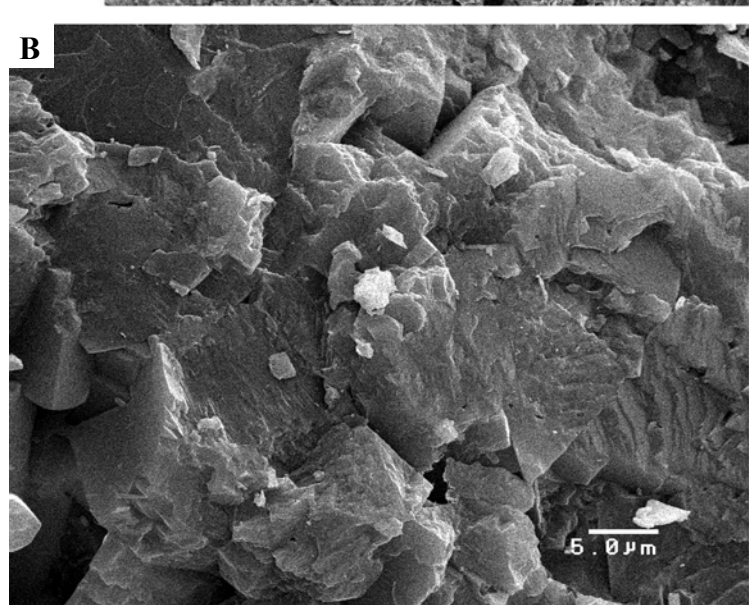
**CHEROKEE 22-14**  
**5768.7'**



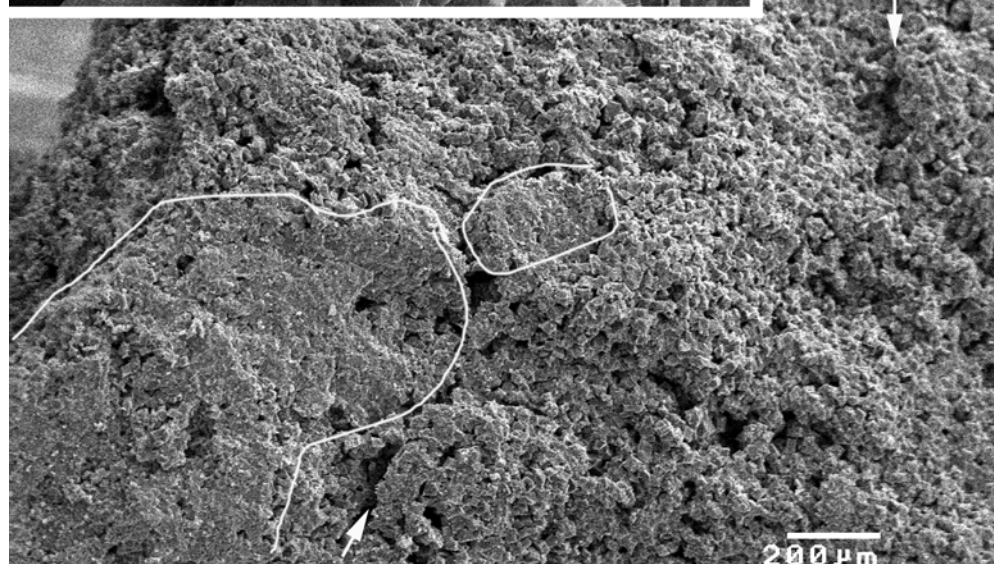
*Photomicrograph 1. Cherokee 22-14. SEM photomicrograph of a core plug e from 5768.7'. Enlargement of mesoporosity (P) and intercrystalline microporosity – BD (arrow). Scale represents 100 microns (0.1 mm).*



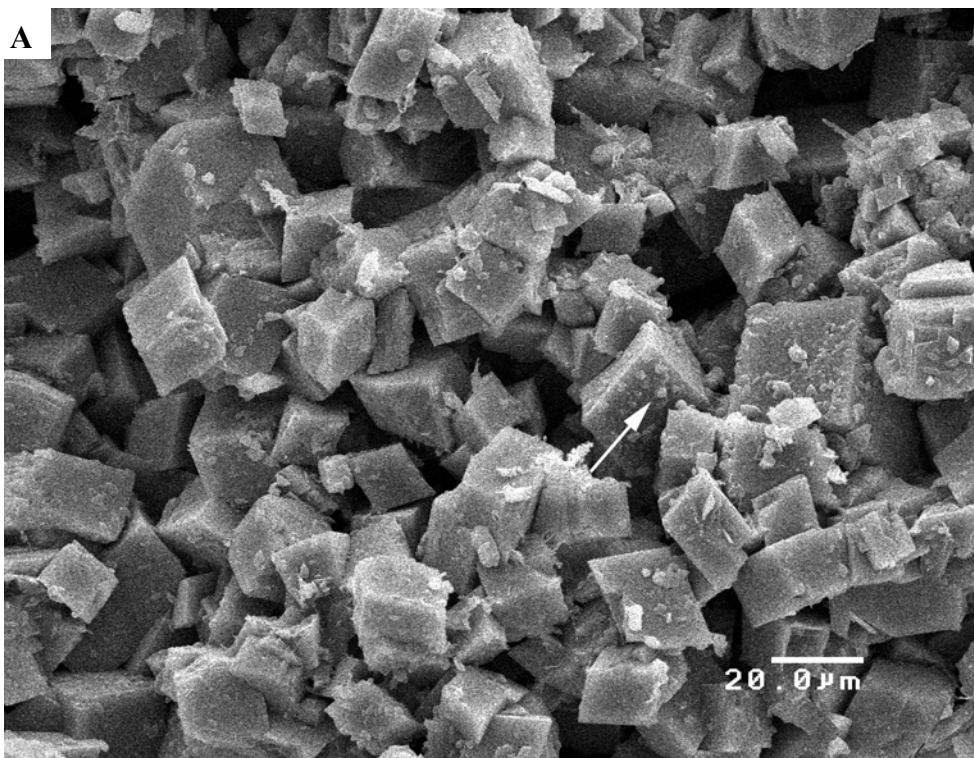
**Photomicrograph 2A.** Cherokee 22-14. SEM photomicrograph of a core plug from 5768.7'. Enlargement highlighting the mesoporosity (P) and the dolomite rhombs visible along their edges (arrow). Scale represents 100 microns (0.1 mm).



**Photomicrograph 2B.** Cherokee 22-14. SEM photomicrograph of a core plug from 5768.7'. Enlargement showing details of a tight area from 2C. Dissolution did not occur in this area. Scale represents 100 microns (0.1 mm).



**Photomicrograph 2C.** Cherokee 22-14. SEM photomicrograph of a core plug from 5768.7'. Dolomite with patchy tight areas (outlined) resulting from incomplete dissolution. Linear features (arrow) are microfractures. Scale represents 200 microns (0.2 mm).



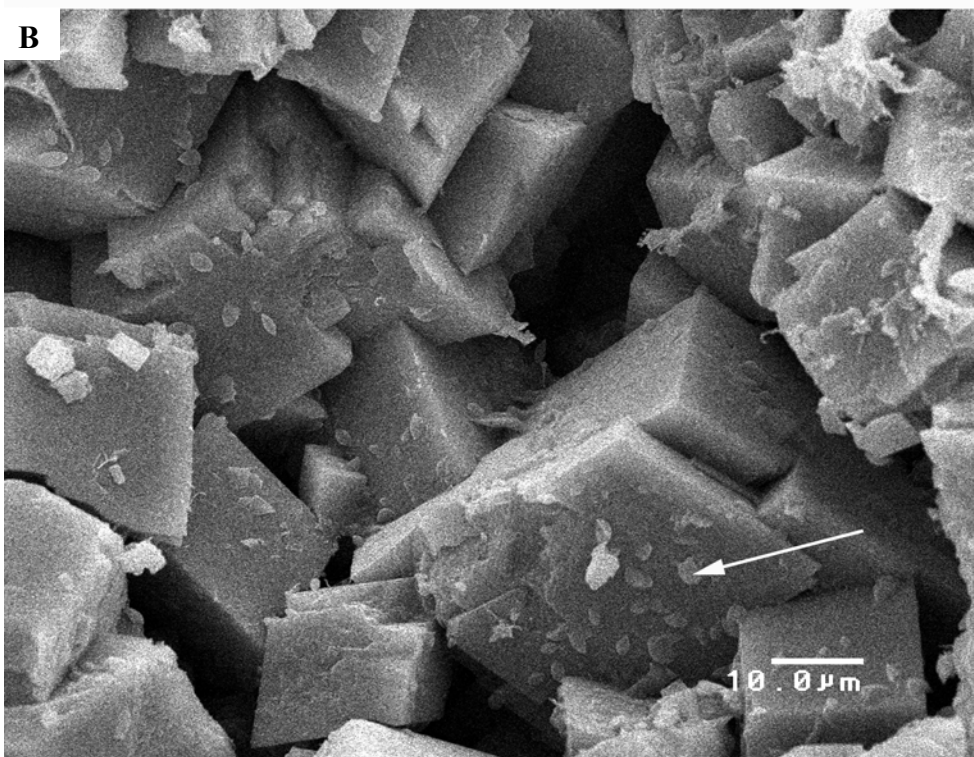
*Photomicrograph 3A.  
Cherokee 22-14.*

*SEM*

*photomicrograph of a  
core plug from  
5768.7'.*

*Enlargement showing  
intercrystalline  
microporosity –BC  
(Black) associated  
with dolomite  
rhombs.*

*Pyrobitumen (arrow)  
is visible on the  
rhombs. Scale  
represents 20 microns  
(0.02 mm).*



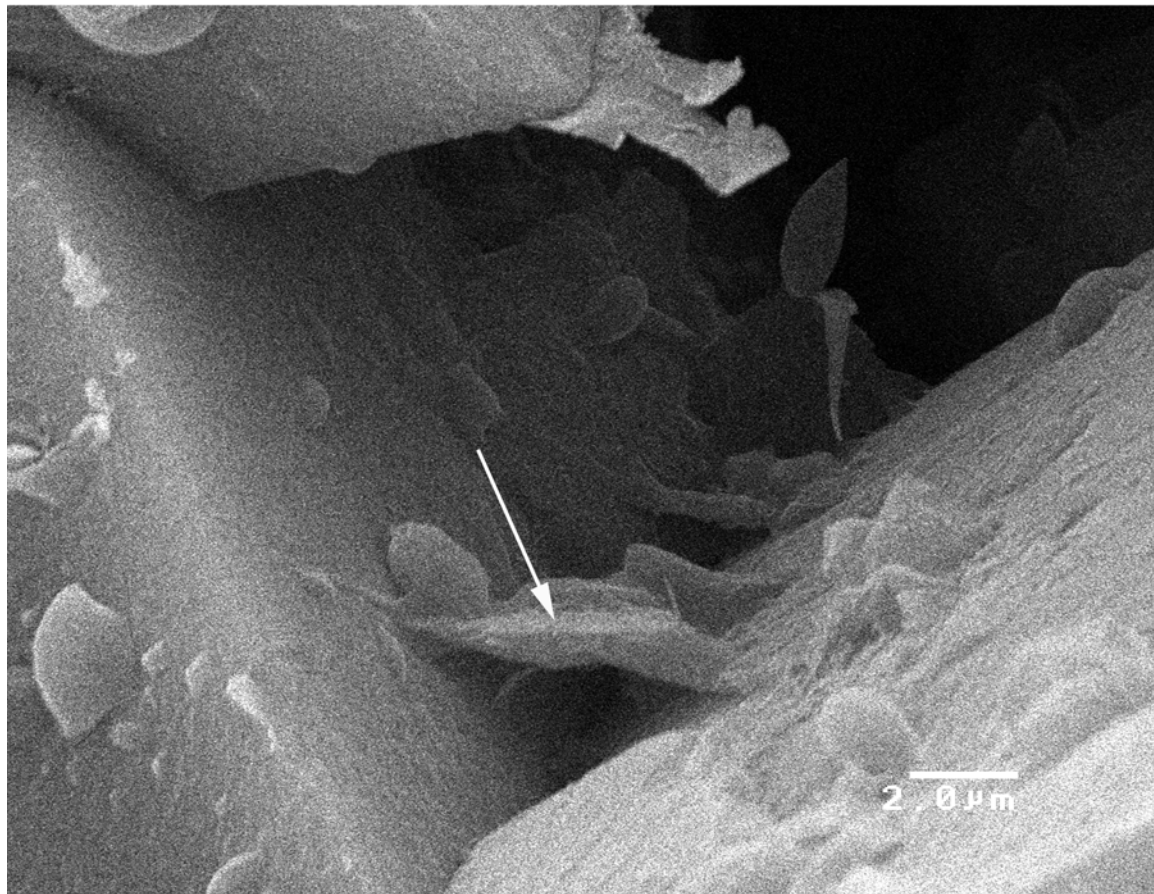
*Photomicrograph 3B.  
Cherokee 22-14.*

*SEM*

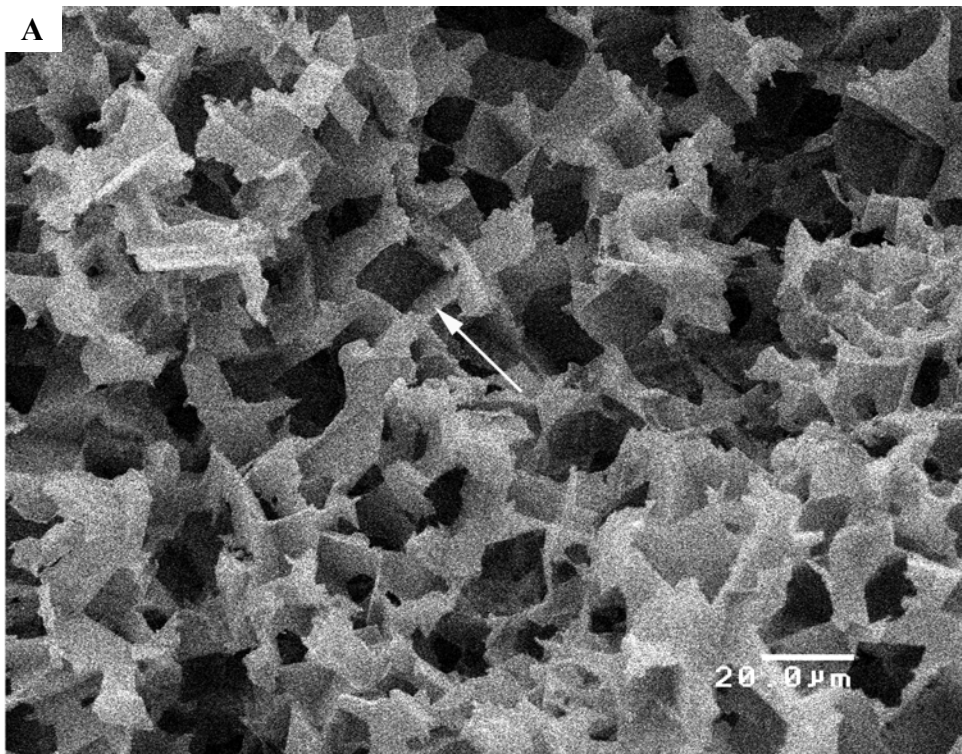
*photomicrograph of a  
core plug from  
5768.7'.*

*Enlargement.  
Showing pyrobitumen  
(arrow) on dolomite  
rhombs.*

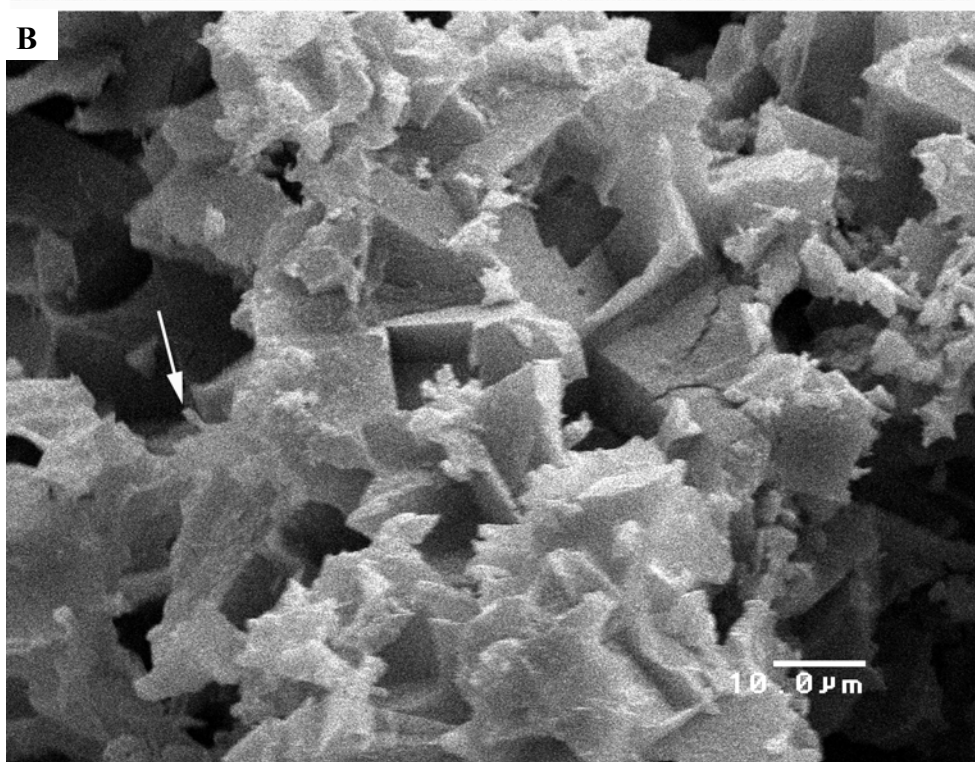
*Microporosity - BC is  
black. Scale  
represents 10 microns  
(0.01 mm).*



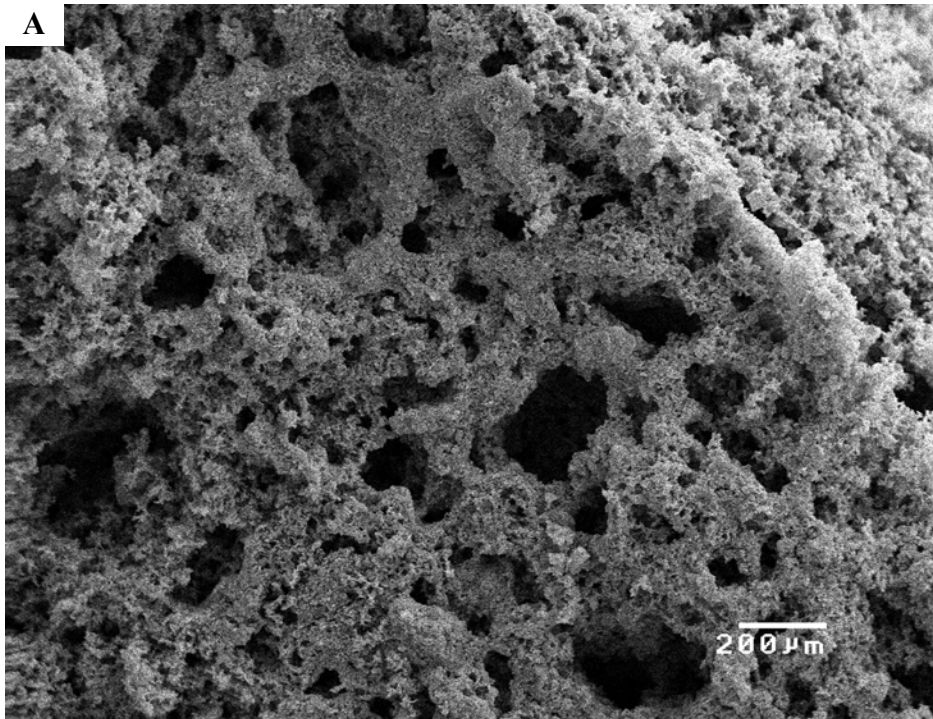
***Photomicrograph 4. Cherokee 22-14. SEM photomicrograph of a core plug from 5768.7'. Enlargement showing pyrobitumen (arrow) bridging an area of intercrystalline – BC microporosity. Scale represents 2 microns (0.002mm).***



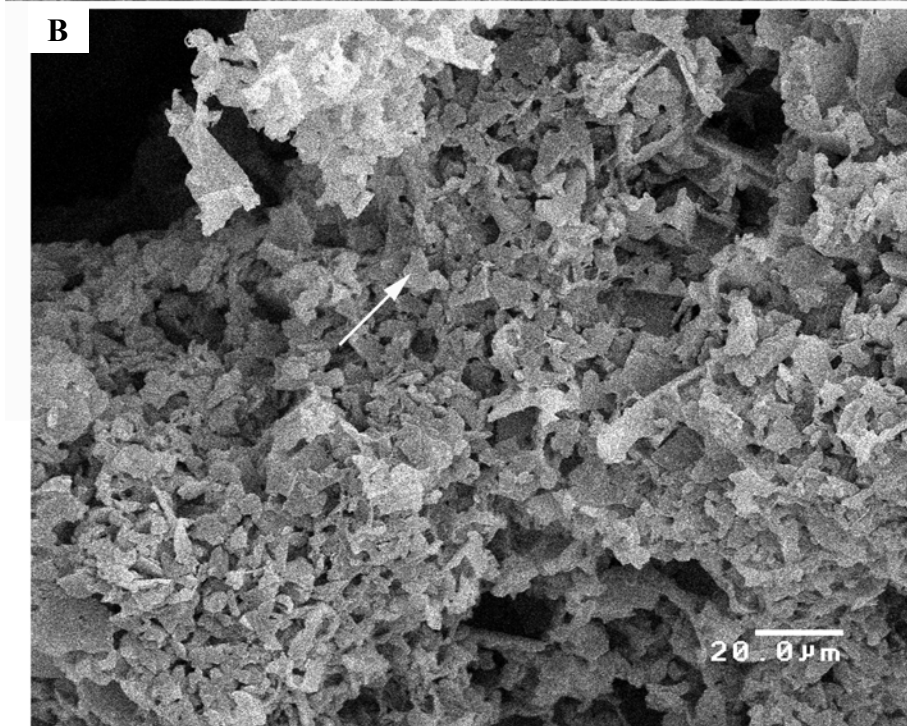
*Photomicrograph 5A. Cherokee 22-14. SEM photomicrograph of a pore cast from 5768.7'. Enlargement showing details of intercrystalline microporosity – BC and the pore throats (arrow) connecting them. This is referred to as boxwork fabric. Note that the solid areas represent porosity. Scale represents 20 microns (0.02mm).*



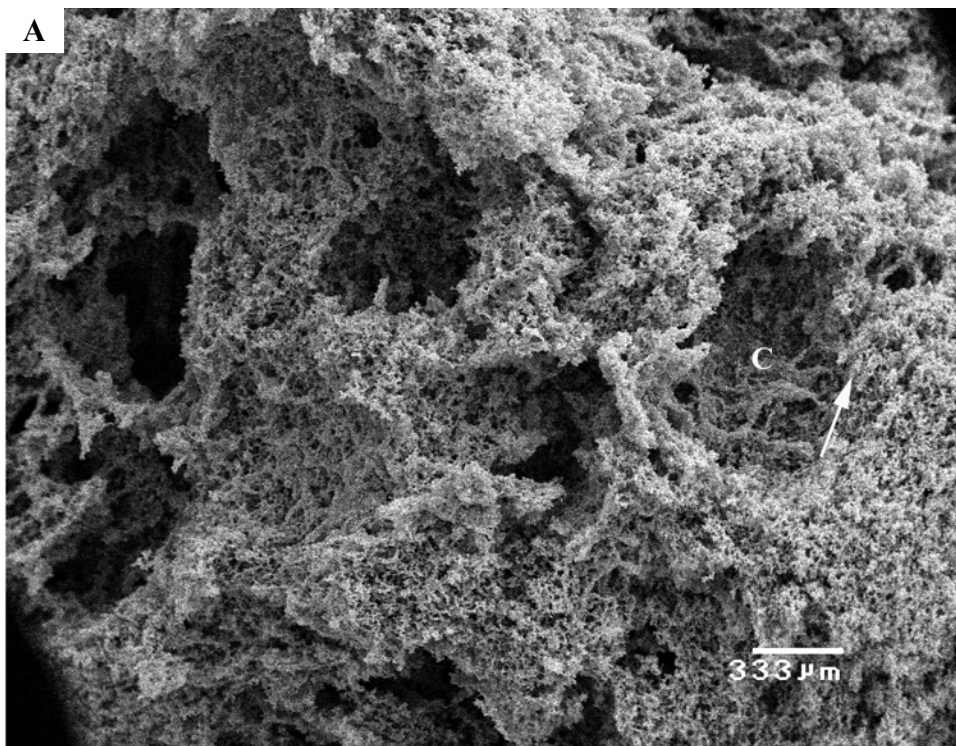
*Photomicrograph 5B. Cherokee 22-14. SEM photomicrograph of a pore cast from 5768.7'. Enlargement showing details of intercrystalline microporosity – BC, pore throats connecting them, and several “dead end” pore throats (arrow). Note that the solid areas represent porosity. Scale represents 10 microns (0.01 mm).*



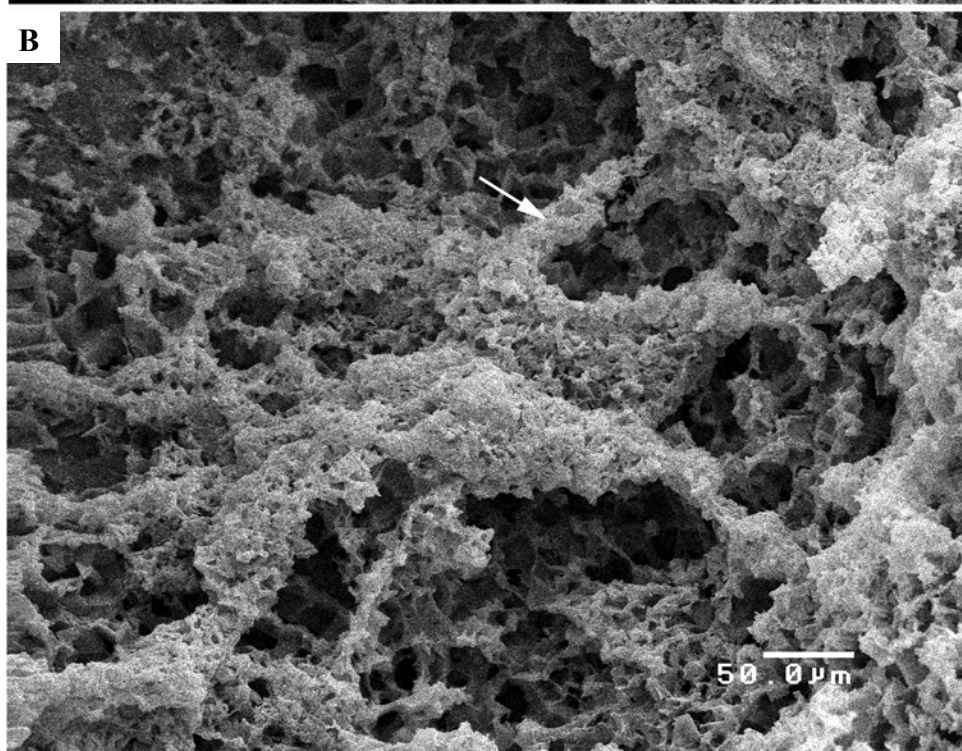
*Photomicrograph 6A.  
Cherokee 22-14. SEM  
photomicrograph of a pore  
cast from 5768.7'.  
Dominant fabric is that of  
well-connected areas of  
microporosity. Area in  
upper right exhibits  
intercrystalline  
microporosity – BC. Note  
that the solid areas  
represent porosity.  
Scale represents 200  
microns (0.2 mm).*



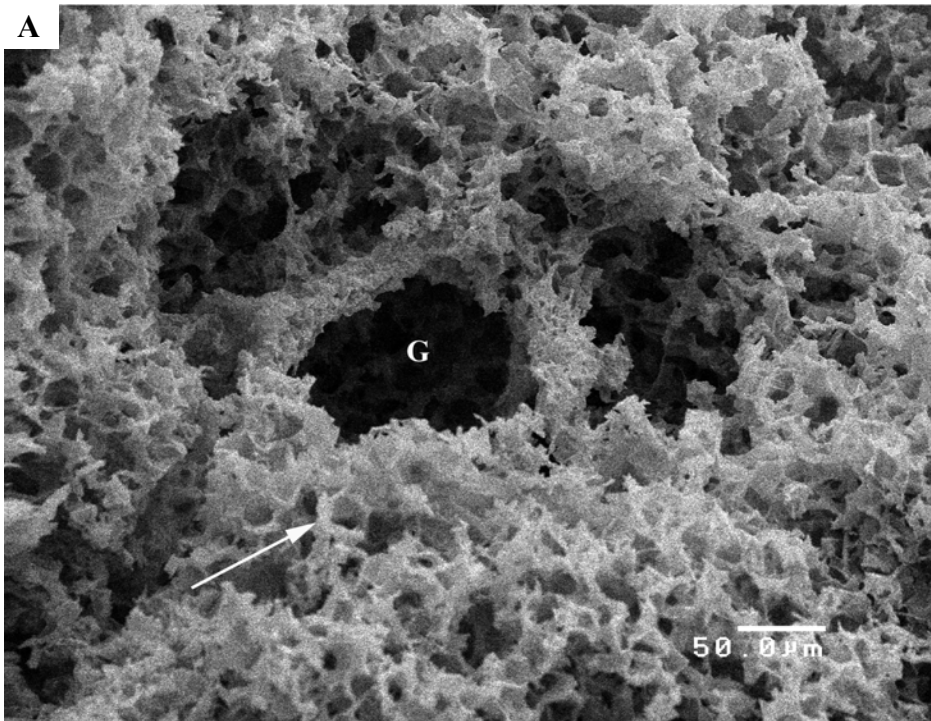
*Photomicrograph 6B.  
Cherokee 22-14. SEM  
photomicrograph of a pore  
cast from 5768.7'.  
Enlargement of an  
interconnection from 3A  
showing the presence of  
abundant micropores  
(arrow). Note that the  
solid areas represent  
porosity.  
Scale represents 20  
microns (0.02 mm).*



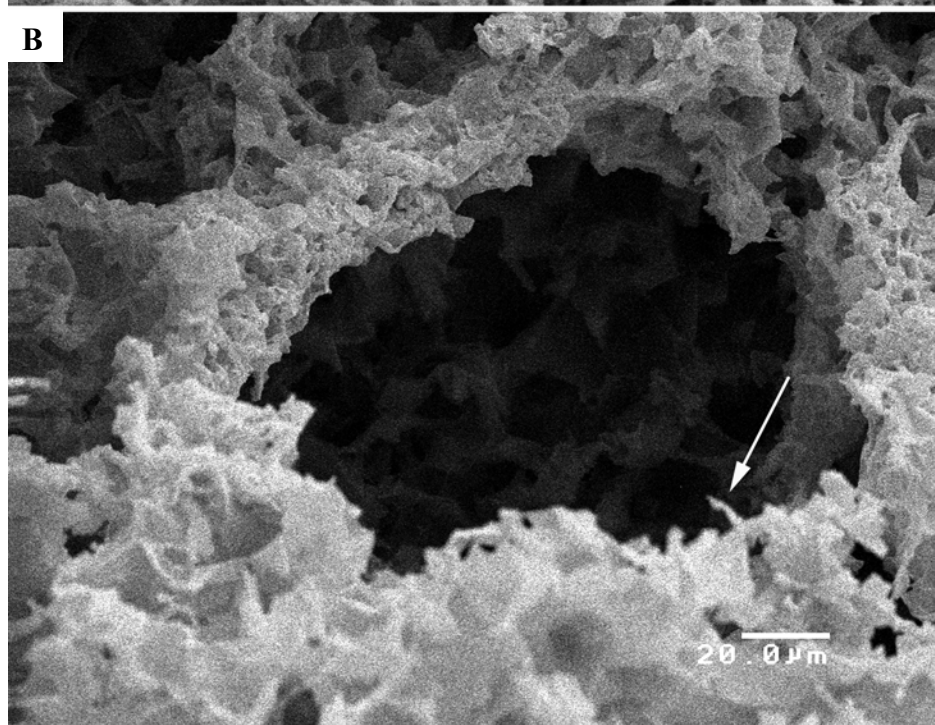
*Photomicrograph 7A. Cherokee 22-14. SEM photomicrograph of a pore cast from 5768.7'. Microporosity – BC (arrow) formed among pseudoclasts (C) resulting from incomplete dissolution. Note that the solid areas represent porosity. Scale represents 333 microns (0.333 mm).*



*Photomicrograph 7B. Cherokee 22-14. SEM photomicrograph of a pore cast from 5768.7'. Enlargement showing a network of intrapseudoclastic micropores – BC (arrow). Note that the solid areas represent porosity. Scale represents 50 microns (0.05 mm).*

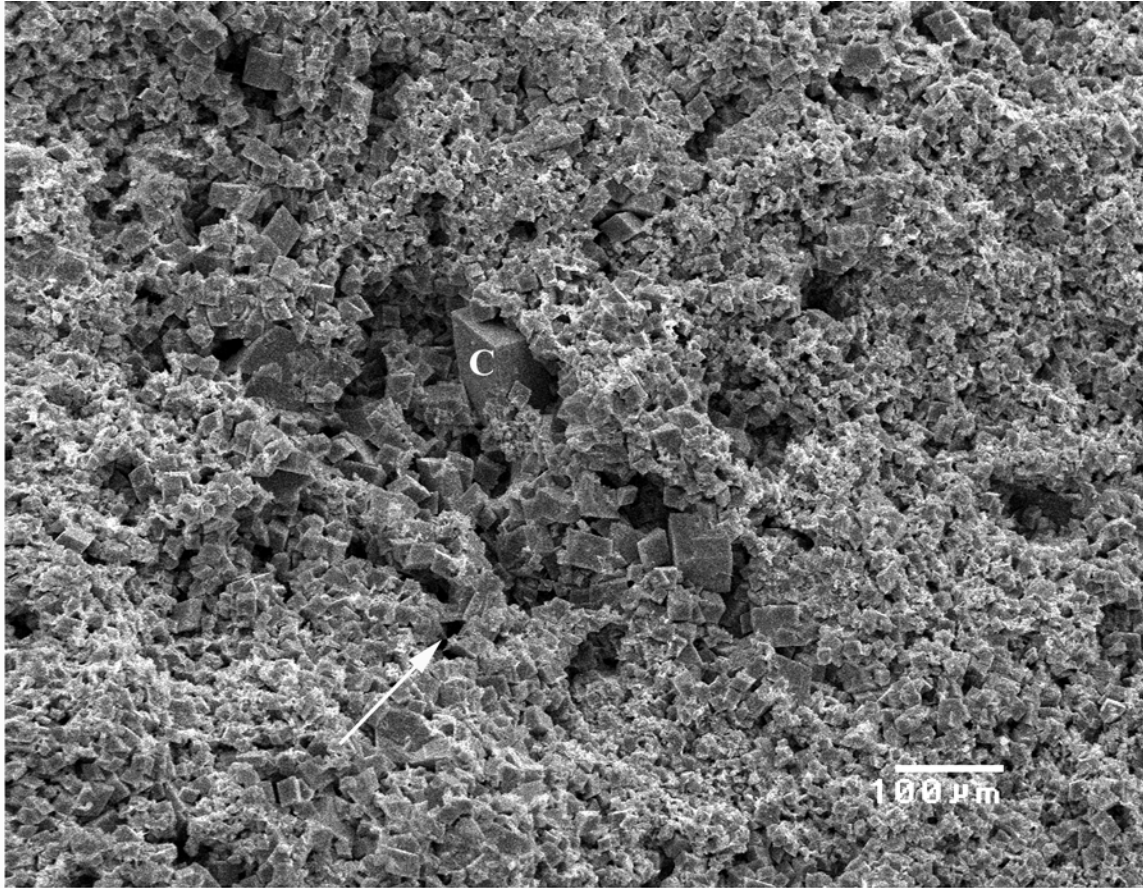


*Photomicrograph 8A. Cherokee 22-14. SEM photomicrograph of a pore cast from 5768.7'. Microporosity – BC (arrow) formed among grains (G) or pseudoclasts resulting from incomplete dissolution. Note that the solid areas represent porosity. Scale represents 50 microns (0.05 mm).*

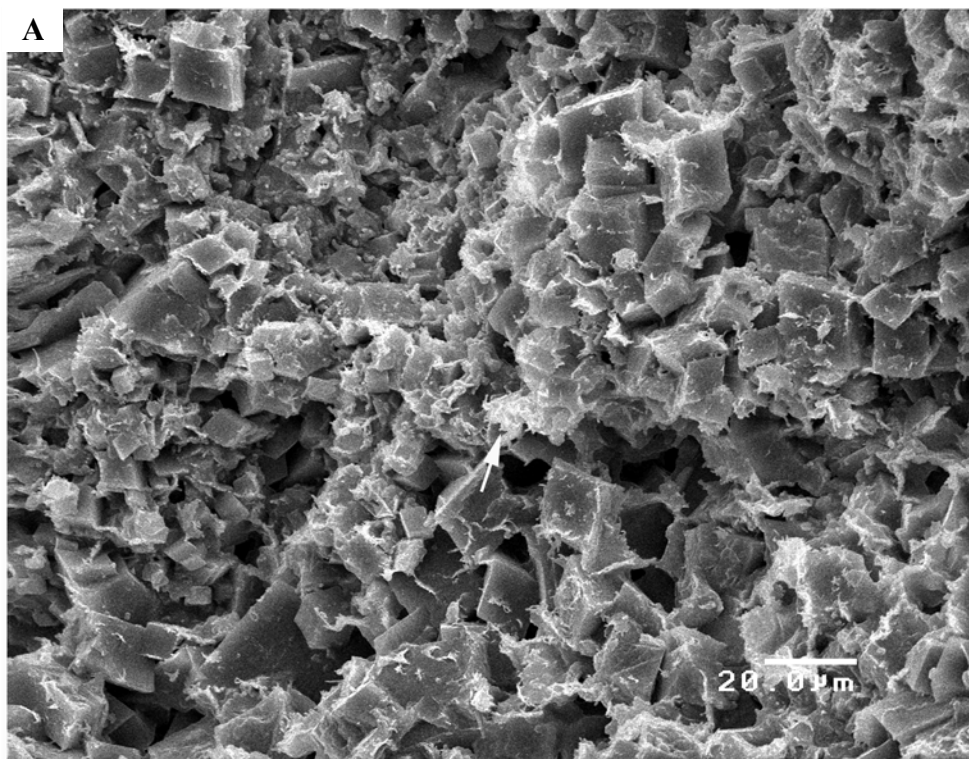


*Photomicrograph 8B. Cherokee 22-14. SEM photomicrograph of a pore cast from 5768.7'. Enlargement showing the rare "dead end" pore throats (arrow) associated with the grain in 5A. Note that the solid areas represent porosity. Scale represents 20 microns (0.02 mm).*

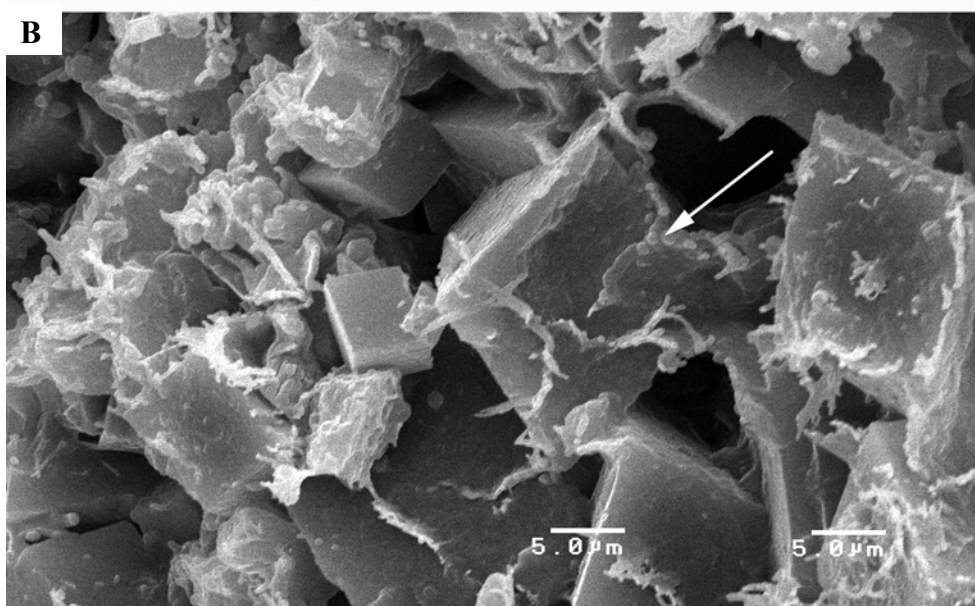
**CHEROKEE 22-14**  
**5827.7'**



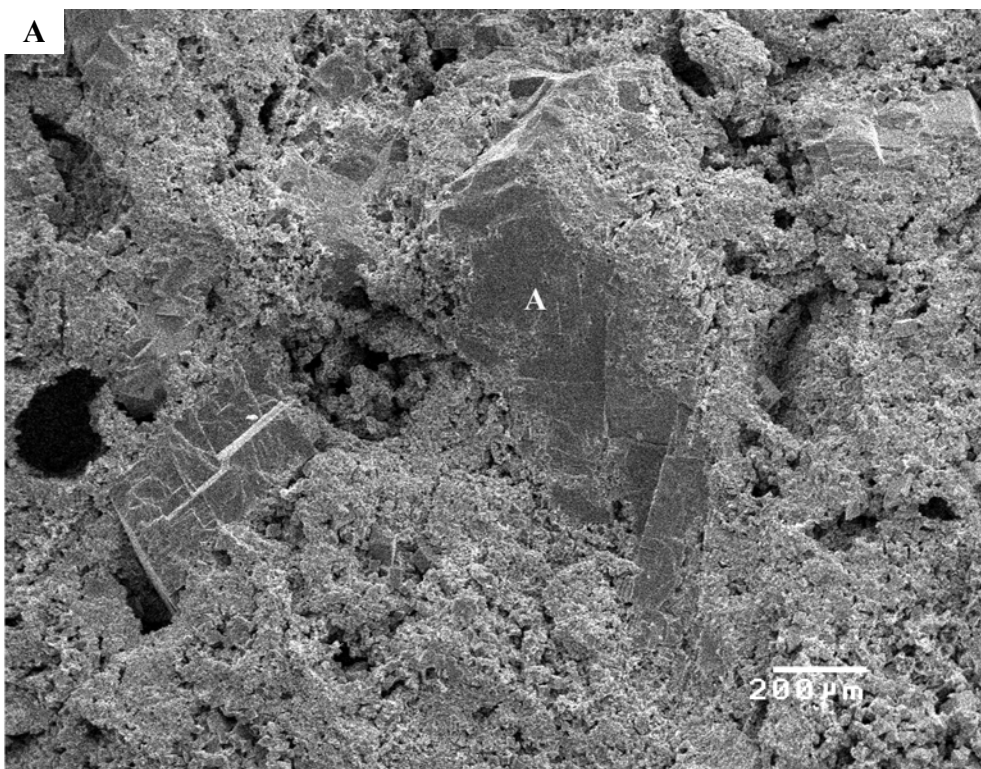
*Photomicrograph 1. Cherokee 22-14. SEM photomicrograph of a core plug from 5827.7'. Dolomite exhibiting moldic microporosity –MO (arrow). One larger pore contains equant spar calcite (C), [a burial cement]. Scale represents 100 microns (0.1 mm).*



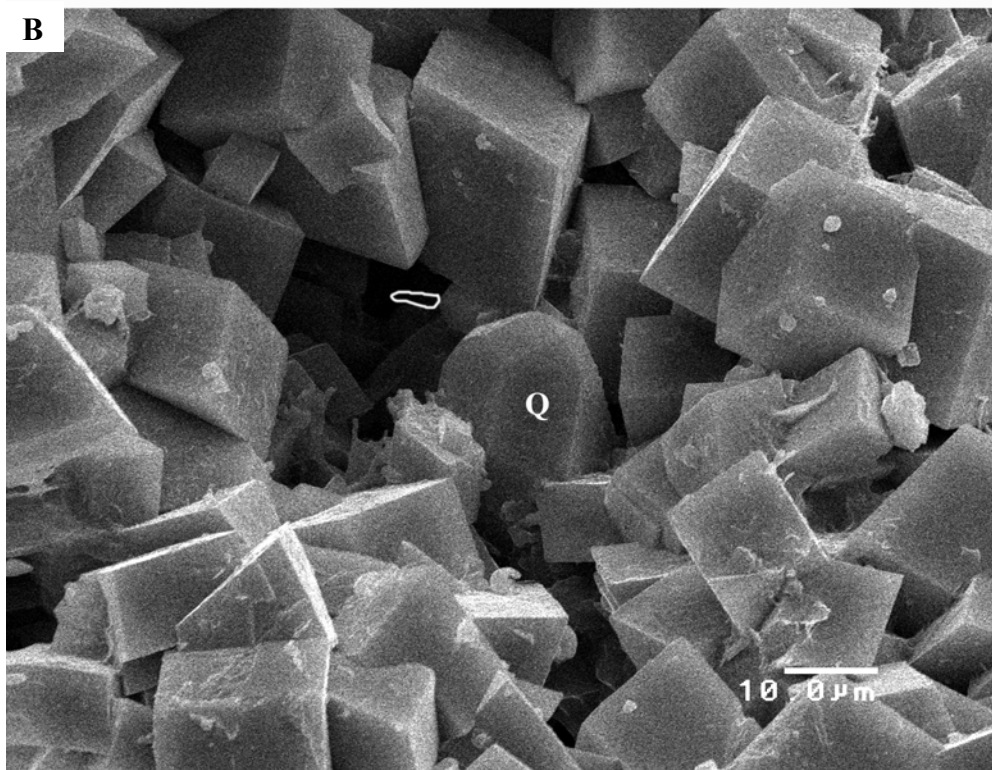
*Photomicrograph 2A. Cherokee 22-14. SEM photomicrograph of a core plug from 5827.7'. Dolomite exhibiting intercrystalline microporosity – BC (black). The rhombs are partially coated with pyrobitumen and smectite clay (arrow). Scale represents 20 microns (0.02mm).*



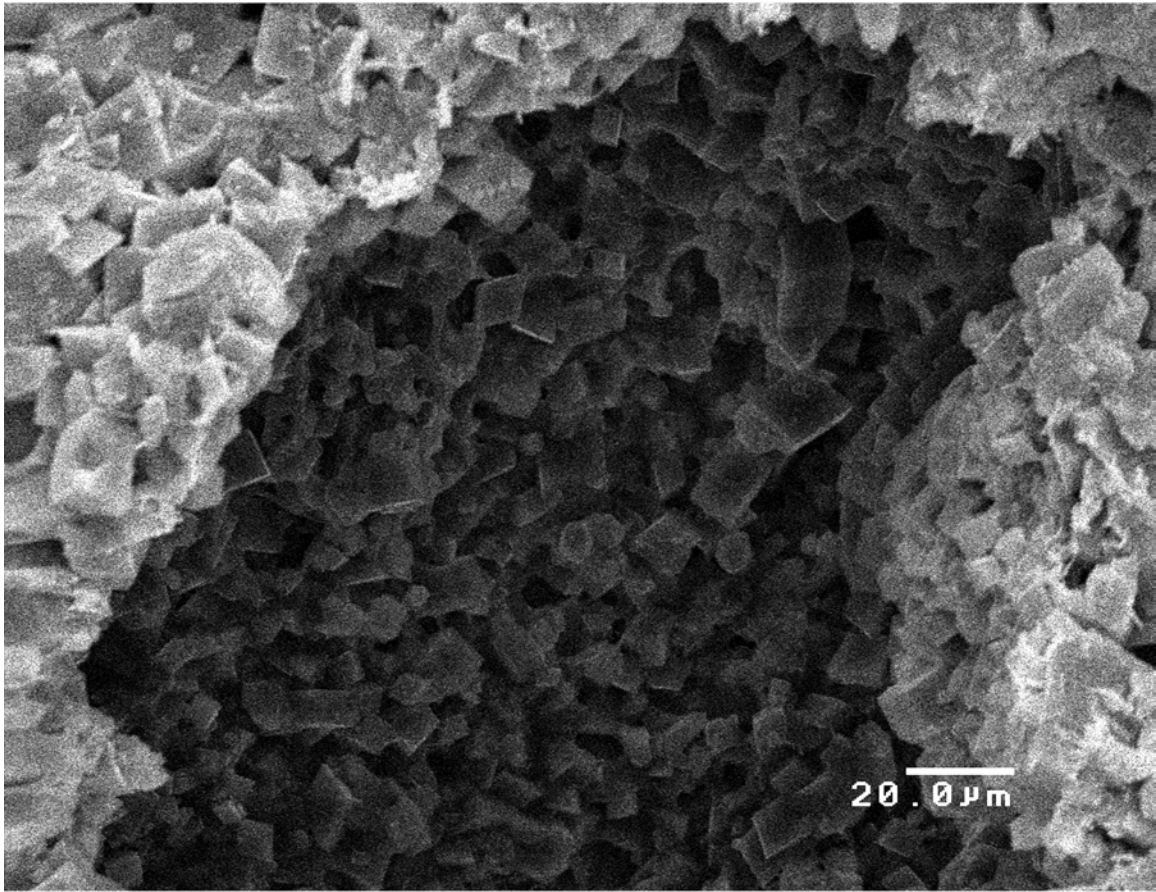
*Photomicrograph 2B. Cherokee 22-14. Composite SEM photomicrograph of a core plug from 5827.7'. Enlargement showing details of the clays and pyrobitumen (arrow) from 2A. Scale represents 5 microns (0.005 mm).*



*Photomicrograph 3A. Cherokee 22-14. SEM photomicrograph of a core plug from 5827.7'. Anhydrite cement (A) within an area containing microporosity (black). Scale represents 200 microns (0.2 mm).*

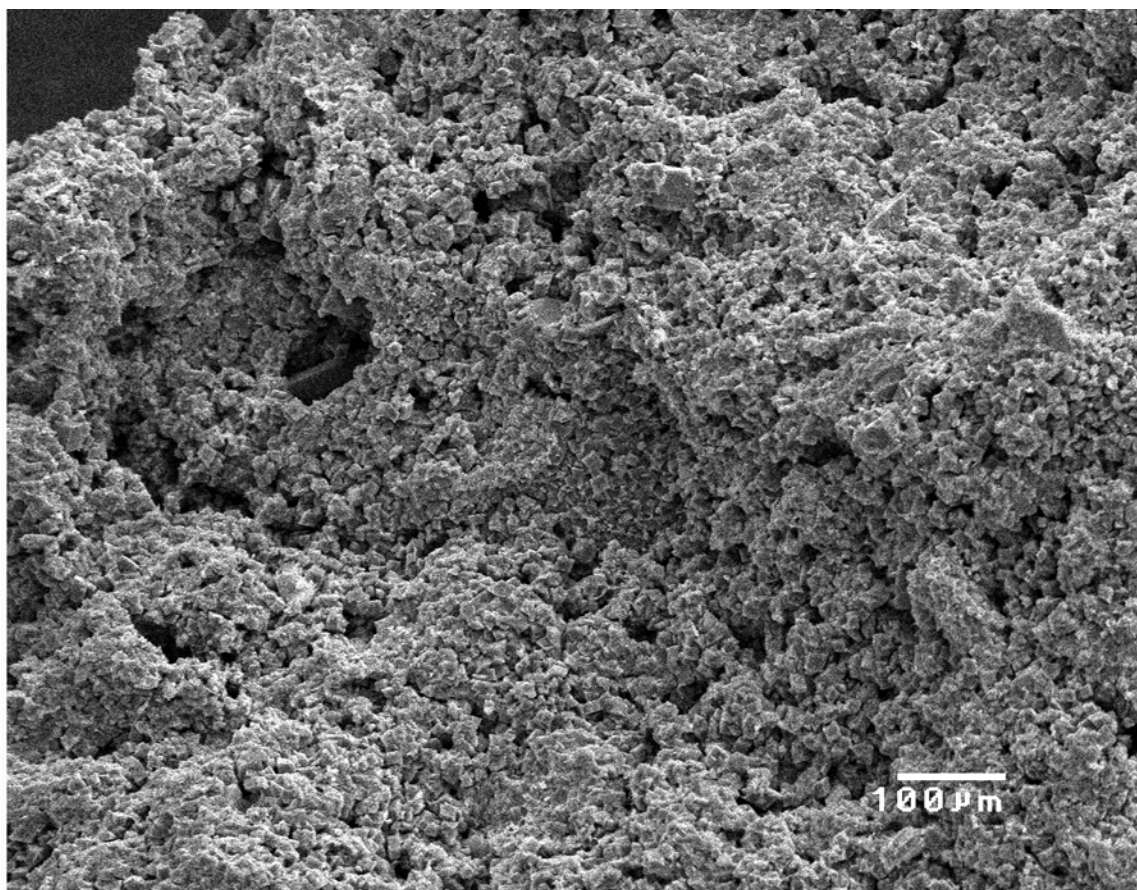


*Photomicrograph 3B. Cherokee 22-14. SEM photomicrograph of a core plug from 5827.7'. Enlargement of an area dominated by intercrystalline microporosity – BC. A single crystal of authigenic quartz (Q) is visible within the porosity. A pore throat deep within a pore is outlined. Scale represents 10 microns (0.01 mm).*

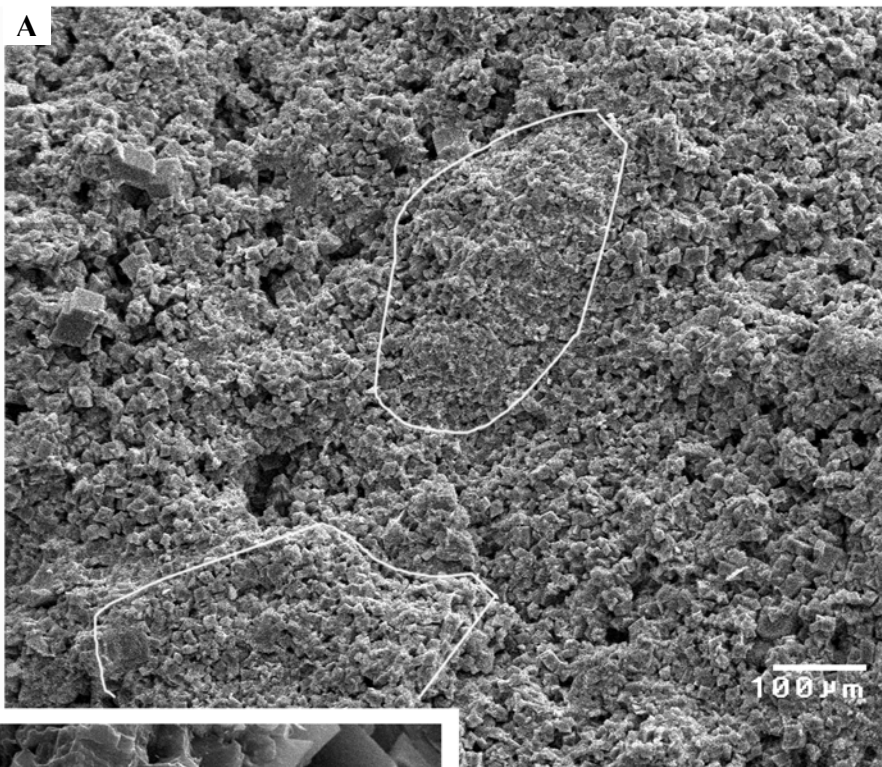


*Photomicrograph 4. Cherokee 22-14. SEM photomicrograph of a core plug from 5827.7' showing enlargement of a mesovug. Scale represents 20 microns (0.02 mm).*

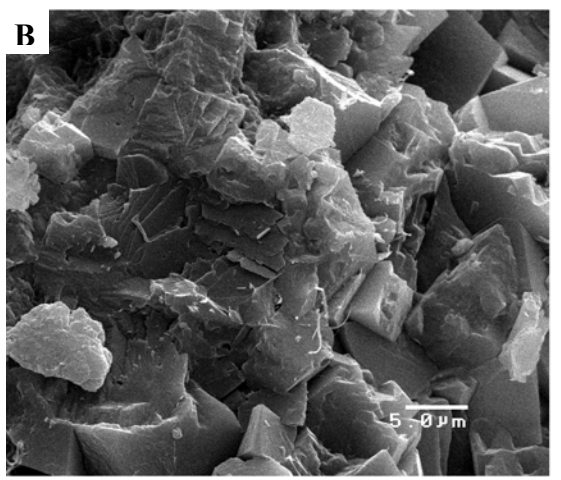
**CHEROKEE 33-14**  
**5773.9'**



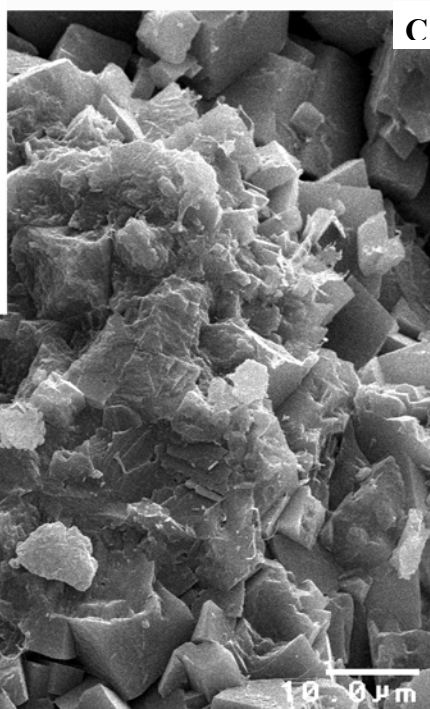
*Photomicrograph 1. Cherokee 33-14. SEM photomicrograph of a core plug from 5773.9' showing dolomite exhibiting abundant mesopores. Scale represents 100 microns (0.1 mm).*



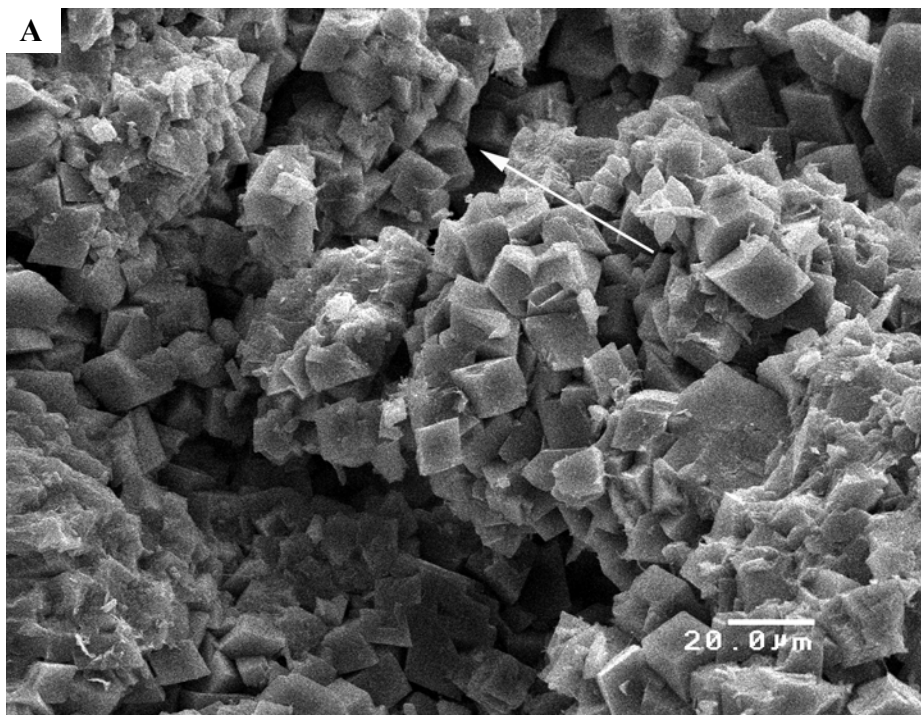
*Photomicrograph  
2A. Cherokee 33-14.  
SEM  
photomicrograph of  
a core plug from  
5773.9'. Dolomite  
containing tight  
areas (outline)  
resulting from  
incomplete  
dissolution. These  
are the pseudoclasts  
referred to  
elsewhere. Scale  
represents 100  
microns (0.1mm).*



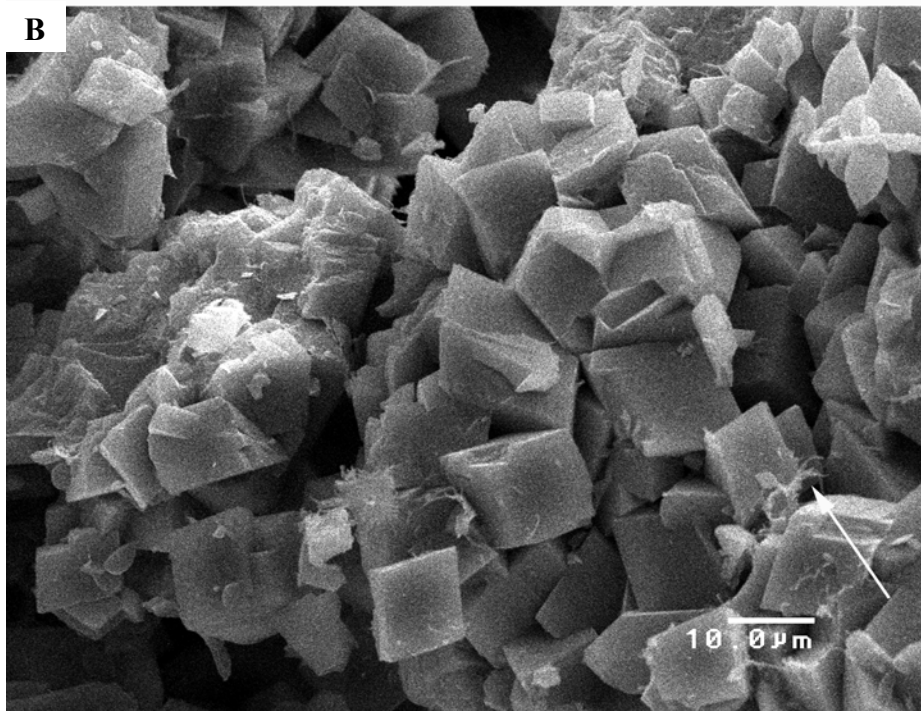
*Photomicrograph  
2B. Cherokee 33-14.  
SEM  
photomicrograph of  
a core plug from  
5773.9'.  
Enlargement of the  
tight area shown in  
2C. Scale represents  
5 microns (0.001  
mm).*



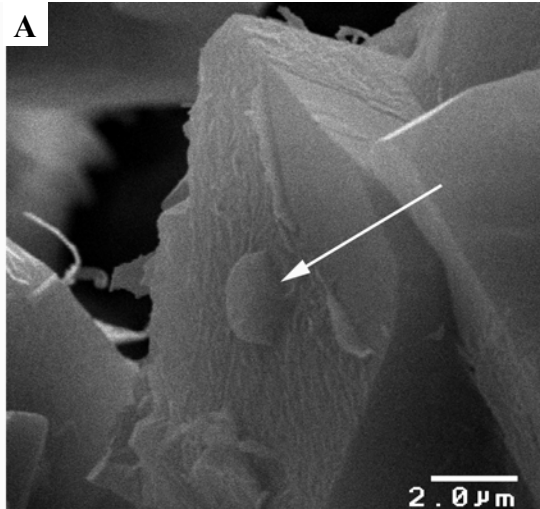
*Photomicrograph  
2C. Cherokee 33-14.  
SEM  
photomicrograph of  
a core plug from  
5773.9'.  
Enlargement  
showing details of a  
tight area. Scale  
represents 10  
microns (0.01 mm).*



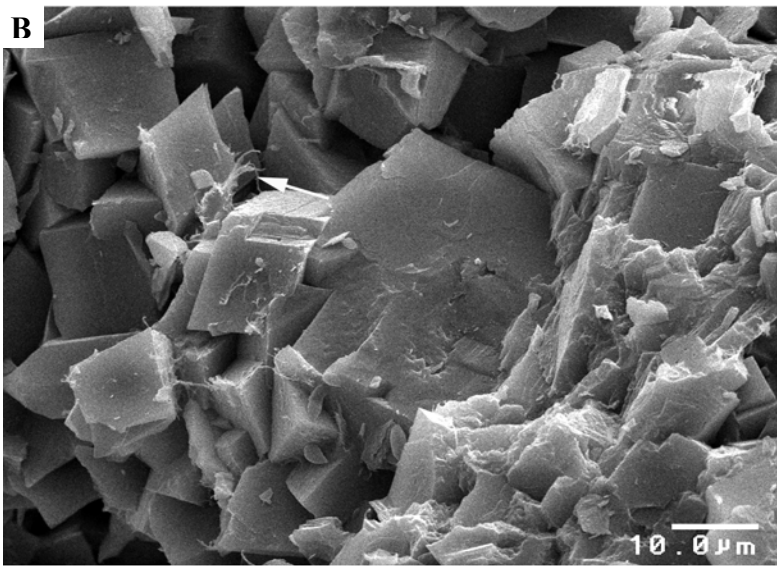
**Photomicrograph 3A.**  
**Cherokee 33-14.**  
**SEM**  
*photomicrograph of a core plug from 5773.9'. Stylofracture (arrow) within an area of intercrystalline microporosity – BC (black). Scale represents 20 microns (0.02 mm).*



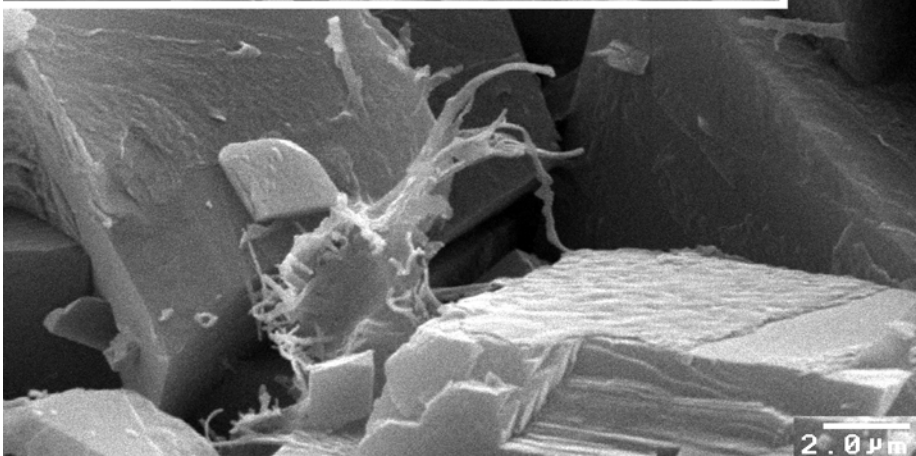
**Photomicrograph 3B.**  
**Cherokee 33-14.**  
**SEM**  
*photomicrograph of a core plug from 5773.9'. Enlargement of the stylofracture in 3A. Note the presence of minor smectite (arrow). Scale represents 20 microns (0.02 mm).*



**Photomicrograph 4A.** Cherokee 33-14. SEM photomicrograph of a core plug from 5773.9'. Enlargement showing pyrobitumen (arrow) within the stylofracture from 3. This indicates that the fracture existed and was open during to pyrobitumen emplacement. Scale represents 2 microns (0.002 mm).

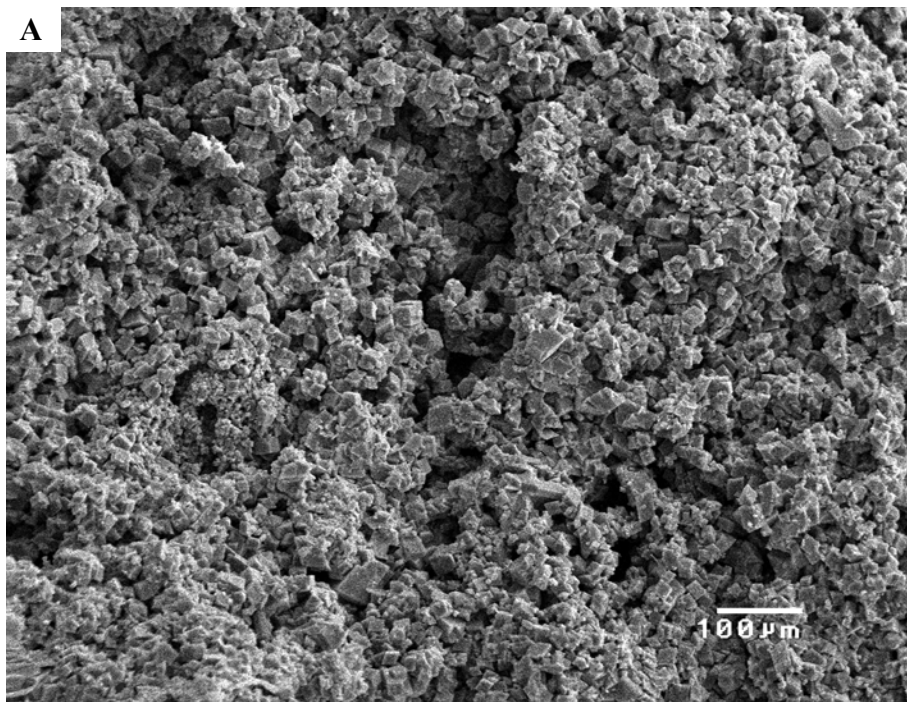


**Photomicrograph 4B.** Cherokee 33-14. SEM photomicrograph of a core plug from 5773.9'. Enlargement showing the presence of minor smectite clay (arrow) in the intergranular area. Scale represents 10 microns (0.01 mm).

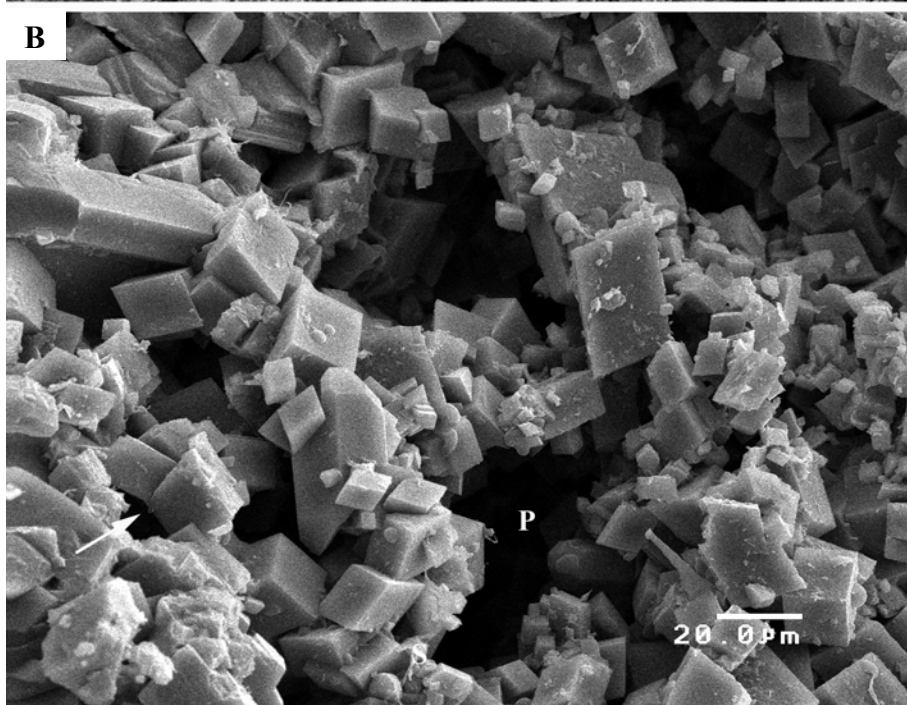


**Photomicrograph 4C.** Cherokee 33-14. SEM photomicrograph of a core plug from 5773.9'. Enlargement showing details of the smectite clay from 4B. Although this clay appears morphologically to be illite clay, it lacks potassium, a major component of illite clay. It is presumed here to be smectite clay. Scale represents 2 microns (0.002 mm).

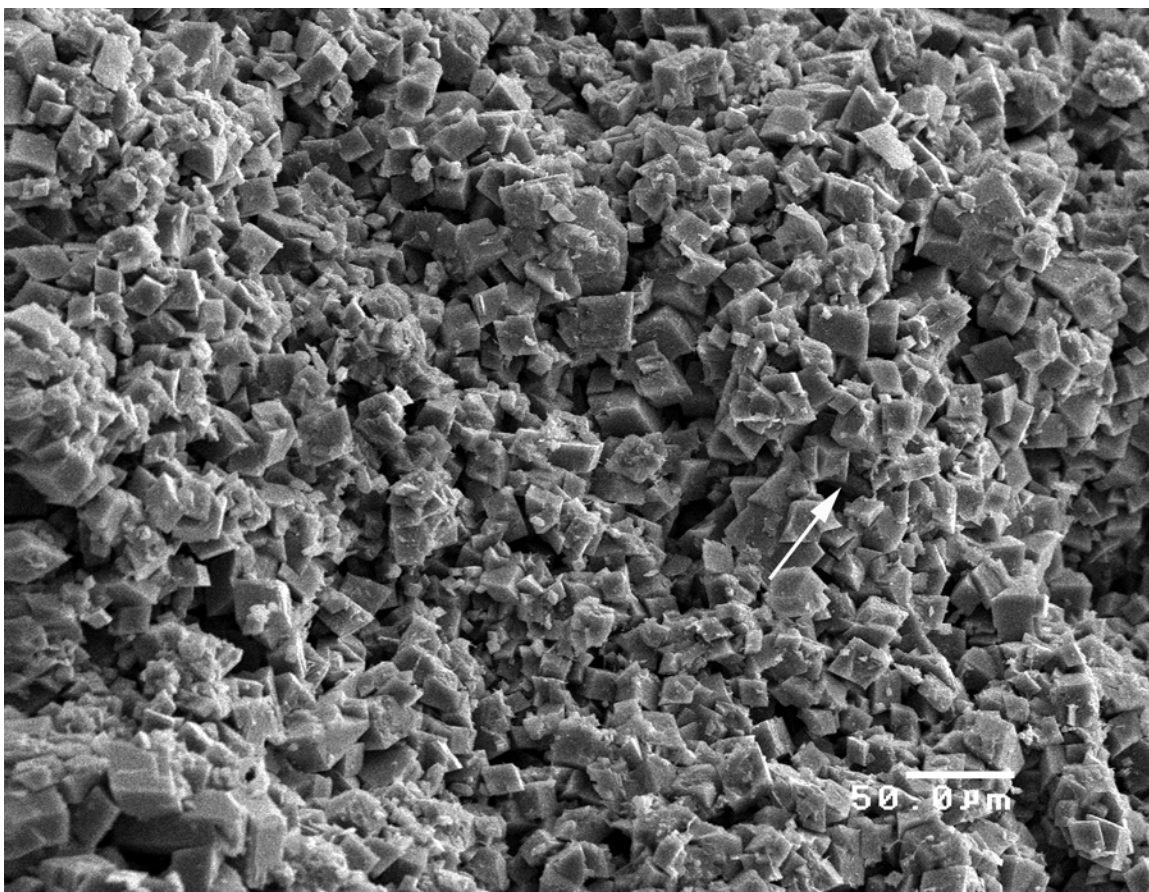
**CHEROKEE 33-14**  
**5781.2'**



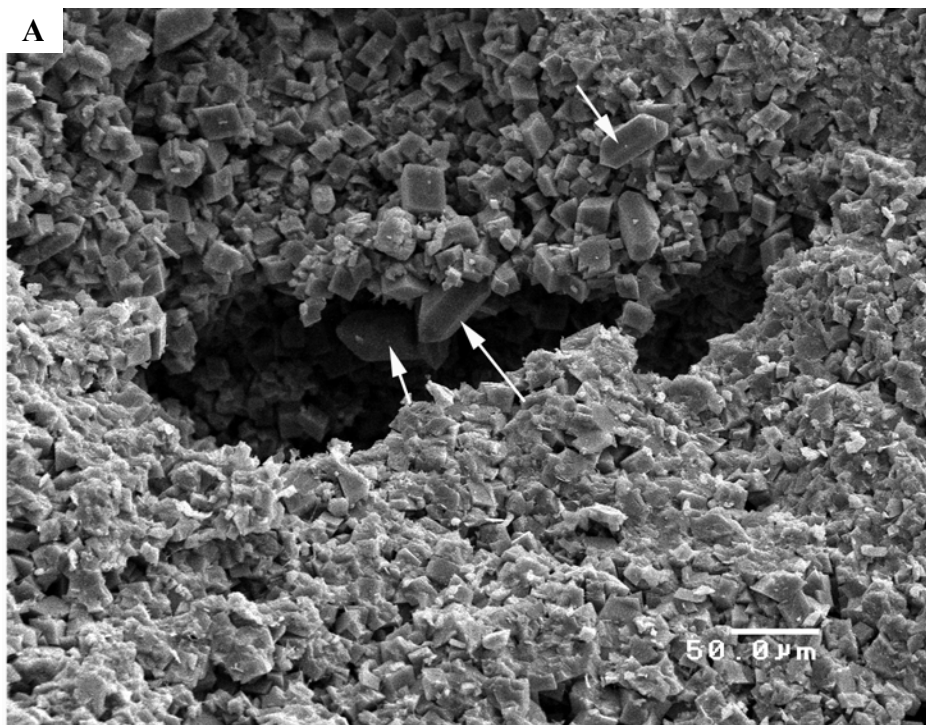
*Photomicrograph 1A. Cherokee 33-14. SEM photomicrograph of a core plug from 5781.2'. Dolomite exhibiting abundant intercrystalline - BC and moldic - MO micro- and mesopores (black). Scale represents 100 microns (0.1 mm).*



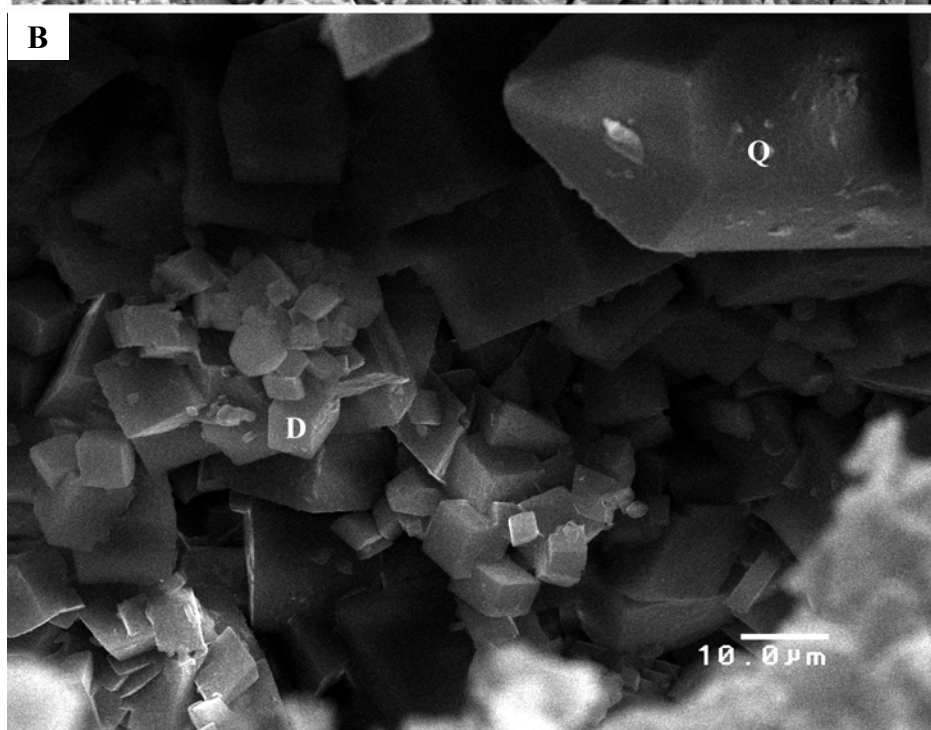
*Photomicrograph 1B. Cherokee 33-14. SEM photomicrograph of a core plug from 5781.2'. Enlargement of 1A showing mesoporosity (P). Minor pyrobitumen (arrow) and smectite (S) visible. Note the well-connected nature of the pore system. Scale represents 50 microns (0.05 mm).*



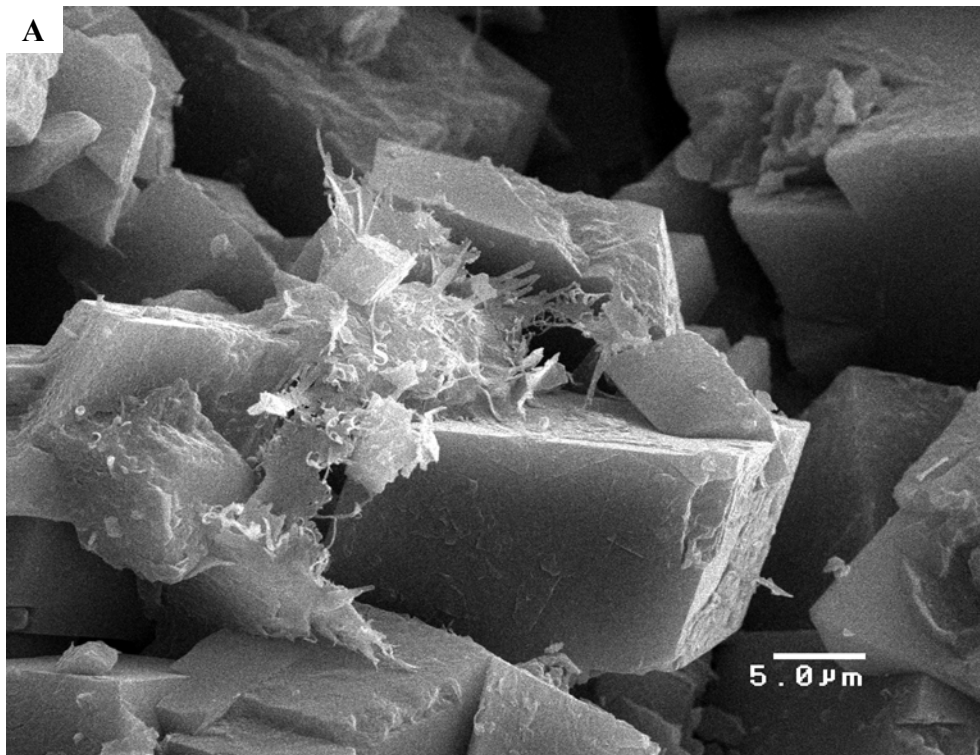
*Photomicrograph 2. Cherokee 33-14. SEM photomicrograph of a core plug from 5781.2'. Dolomite exhibiting abundant intercrystalline microporosity – BC (arrow). Scale represents 50 microns (0.05 mm).*



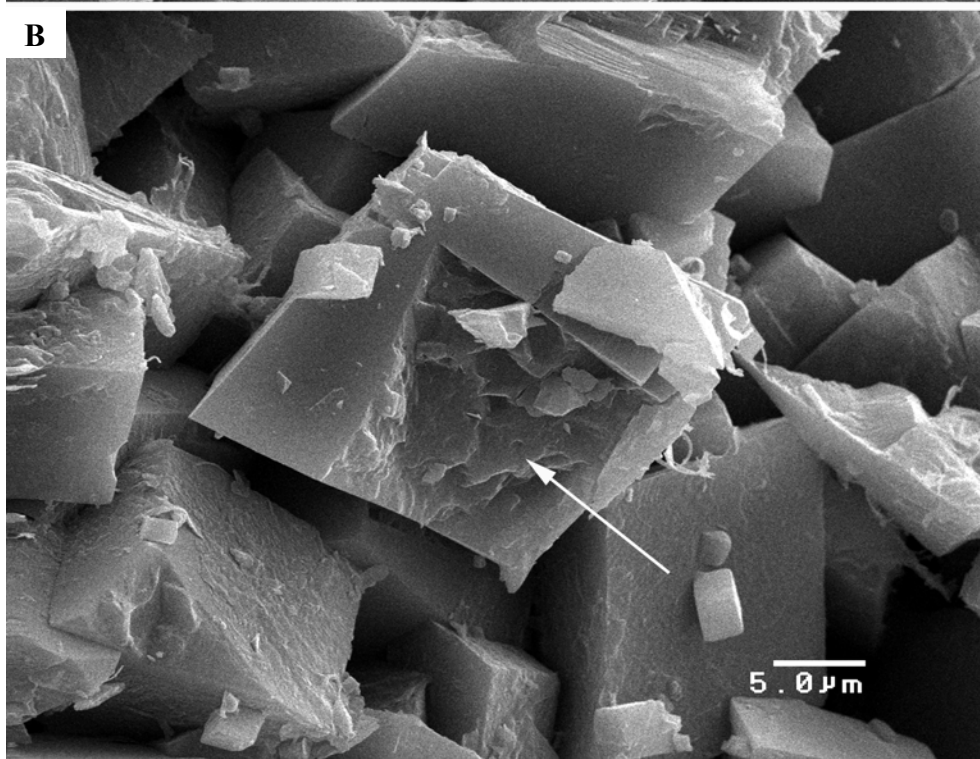
**Photomicrograph 3A.**  
**Cherokee 33-14.**  
**SEM**  
*photomicrograph of a core plug from 5781.2'. Dolomite with a mesovug – msVUG with authigenic quartz (arrows) within it. Scale represents 50 microns (0.05 mm).*



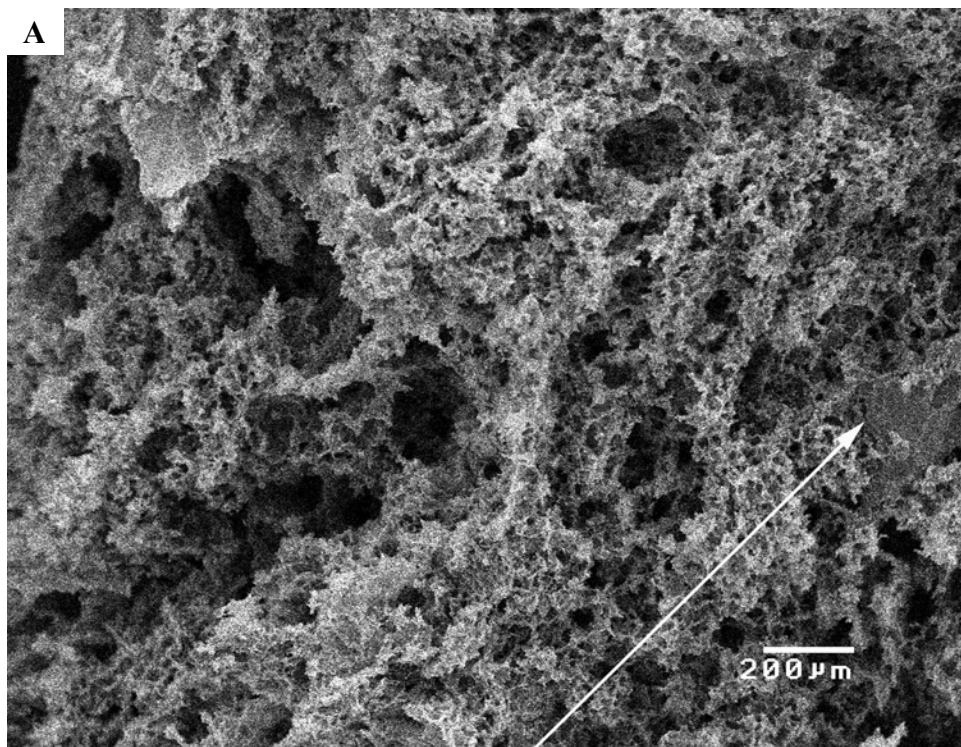
**Photomicrograph 3B.**  
**Cherokee 33-14.**  
**SEM**  
*photomicrograph of a core plug from 5781.2'. Enlargement of the mesovug – msVUG from 3A showing details of the dolomite rhombs (D) and authigenic quartz (Q). Scale represents 10 microns (0.01 mm).*



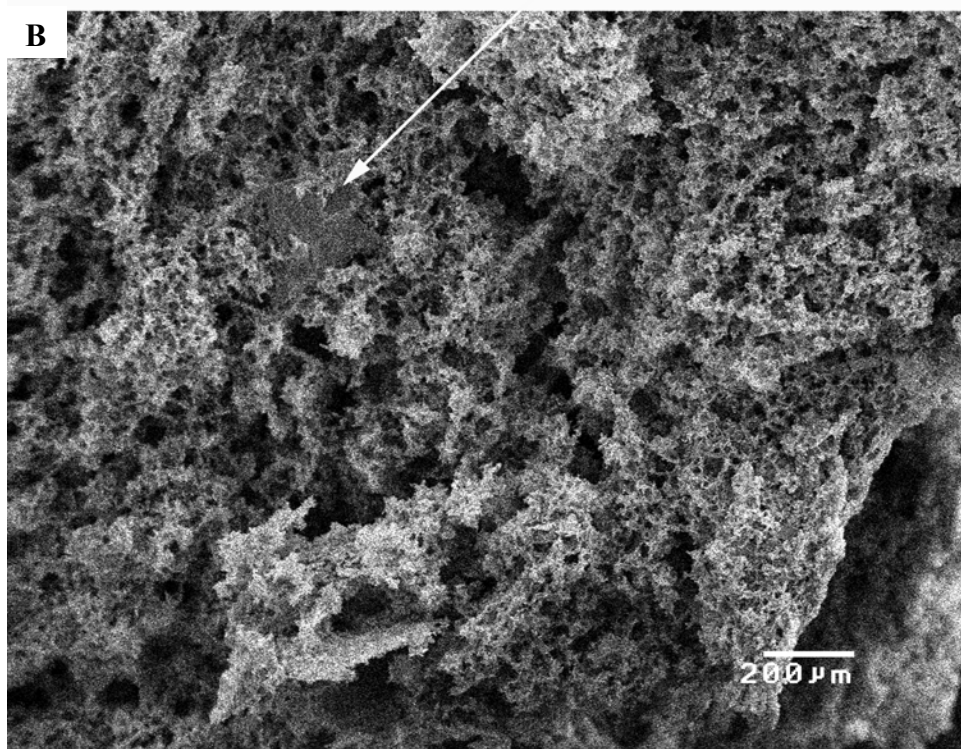
*Photomicrograph 4A. Cherokee 33-14. SEM photomicrograph of a core plug from 5781.2'. Rare authigenic smectite clay (S) deposited on dolomite. Black is intercrystalline microporosity – BC. Scale represents 5 microns (0.005 mm).*



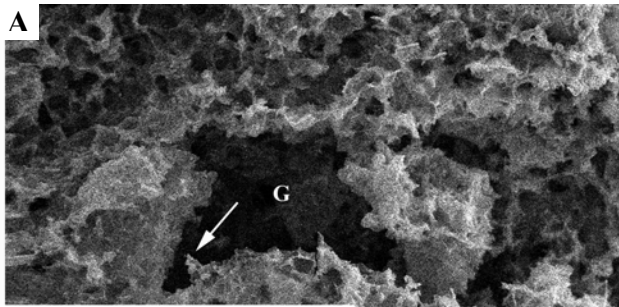
*Photomicrograph 4B. Cherokee 33-14. SEM photomicrograph of a core plug from 5781.2'. Enlargement of a dolomite rhomb showing corrosion (partial dissolution) (arrow) due to dissolution. Scale represents 5 microns (0.005 mm).*



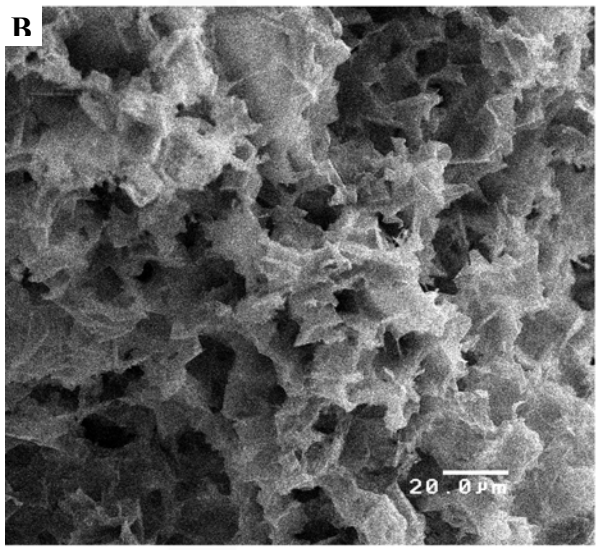
*Photomicrograph 5A. Cherokee 33-14. SEM photomicrograph of a pore cast from 5781.2'. Abundant intercrystalline microporosity – BC with good connectivity. Possible vertical laminae pattern on right; grainstone on left. Note that the solid areas represent porosity. Scale represents 200 microns (0.2 mm).*



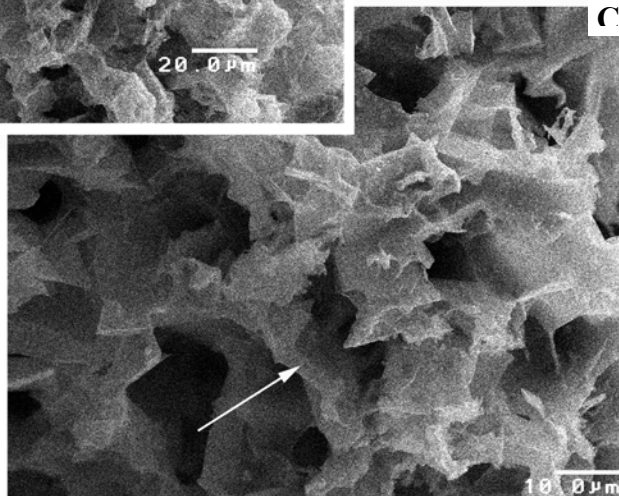
*Photomicrograph 5B. Cherokee 33-14. SEM photomicrograph of a pore cast from 5781.2'. Continuation of 5A. The arrow points to the same mesopore in both views. Note that the solid areas represent porosity. Scale represents 200 microns (0.2 mm).*



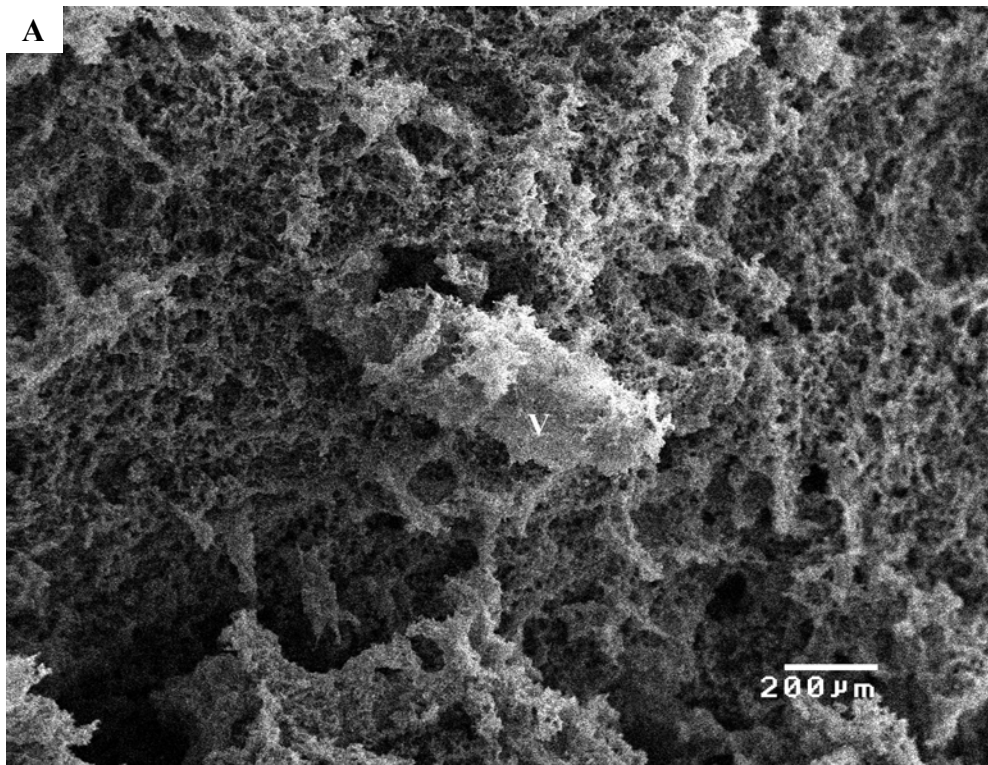
**Photomicrograph 6A.**  
**Cherokee 33-14. SEM**  
 photomicrograph of a pore cast  
 from 5781.2'. Intercrystalline  
 microporosity – BC among  
 pseudo grains (G). “Dead end”  
 pore throats (arrow) lead into  
 the grain. Note that the solid  
 areas represent porosity. Scale  
 represents 50 microns (0.05  
 mm).



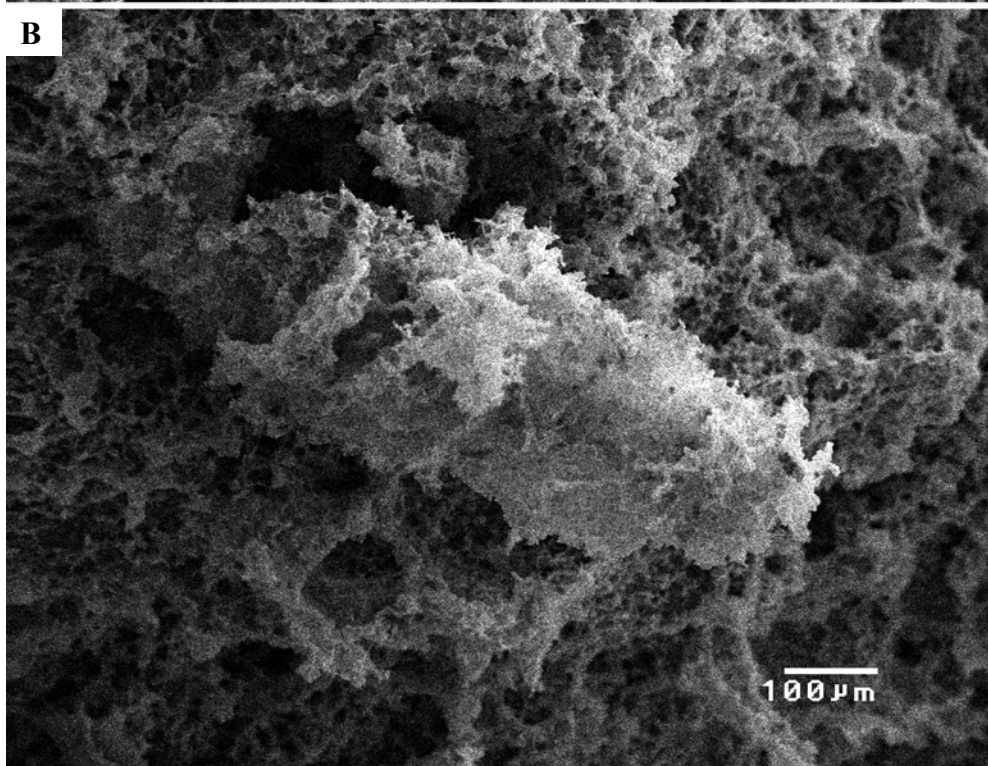
**Photomicrograph 6B.**  
**Cherokee 33-14. SEM**  
 photomicrograph of a pore cast  
 from 5781.2'. Intergranular  
 microporosity – BC in a  
 boxwork fabric with good  
 connectivity. Note that the  
 solid areas represent porosity.  
 Scale represents 20 microns  
 (0.01 mm).



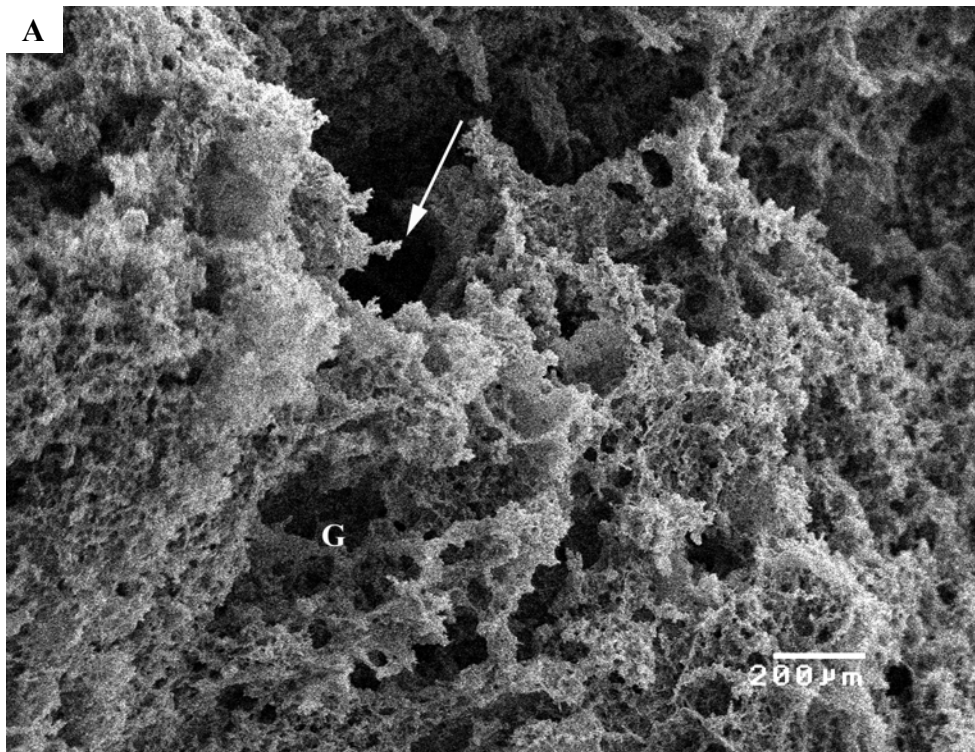
**Photomicrograph 6C.**  
**Cherokee 33-14. SEM**  
 photomicrograph of a pore cast  
 from 5781.2'. Enlargement  
 showing details of the boxwork  
 intercrystalline microporosity –  
 BC. Note the strong interpore  
 connections (arrow). Also note  
 that the solid areas represent  
 porosity. Scale represents 10  
 microns (0.01 mm).



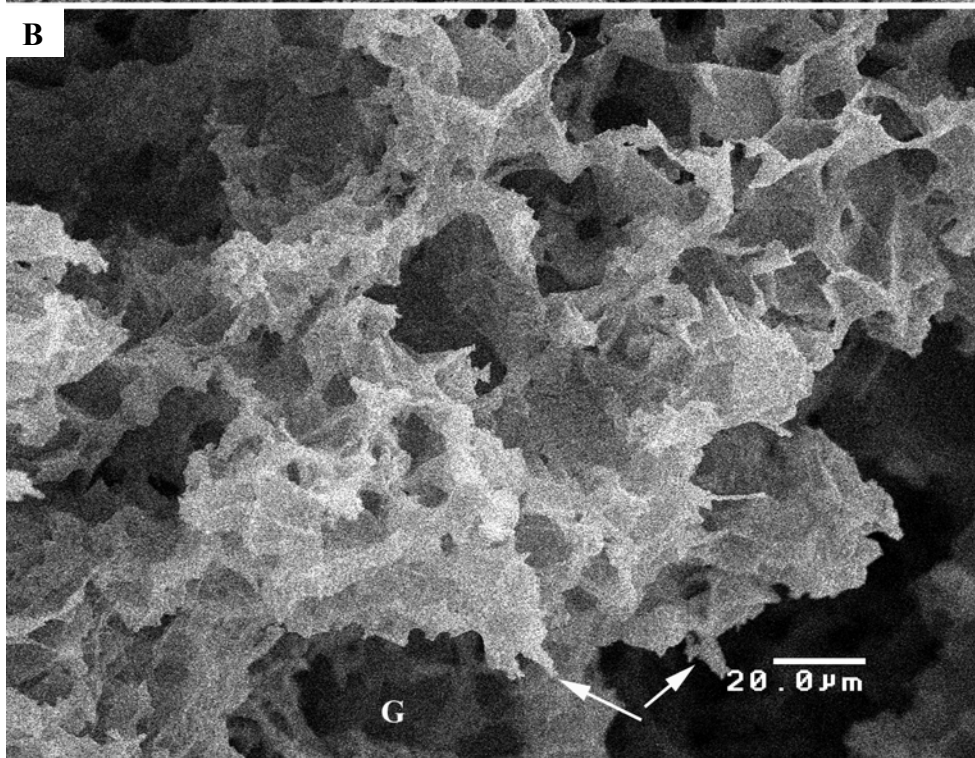
**Photomicrograph 7A. Cherokee 33-14. SEM photomicrograph of a pore cast from 5781.2'. A large mesopore – lms VUG (V) by intercrystalline microporosity - BC (arrow). Note that the solid areas represent porosity. Scale represents 200 microns (0.2 mm).**



**Photomicrograph 7B. Cherokee 33-14. SEM photomicrograph of a pore cast from 5781.2'. Enlargement showing details of the mesoVUG from 7A. Note that the solid areas represent porosity. Scale represents 100 microns (0.1 mm).**



**Photomicrograph 8A.**  
**Cherokee 33-14.**  
**SEM**  
 photomicrograph of a  
 pore cast from  
 5781.2'.  
 Intercrystalline  
 microporosity – BC in  
 intergranular area.  
 Grains (G) have  
 “dead end” pore  
 throats (arrow)  
 protruding into them.  
 Note that the solid  
 areas represent  
 porosity. Scale  
 represents 200  
 microns (0.2 mm).



**Photomicrograph 8B.**  
**Cherokee 33-14.**  
**SEM**  
 photomicrograph of a  
 pore cast from  
 5781.2'.  
 Enlargement showing  
 details from 8A.  
 “Dead end” pore  
 throats (arrow)  
 visible, as are areas  
 vacated by grains (G).  
 Note that the solid  
 areas represent  
 porosity. Scale  
 represents 20 microns  
 (0.02 mm).