

Discovery, excavation,
preparation, of the skull of a
new centrosaurine ceratopsian
from the Wahweap Formation of
Grand Staircase-Escalante
National Monument

Donald DeBlieux

James Kirkland

Utah Geological Survey

Alan Titus

GSENM



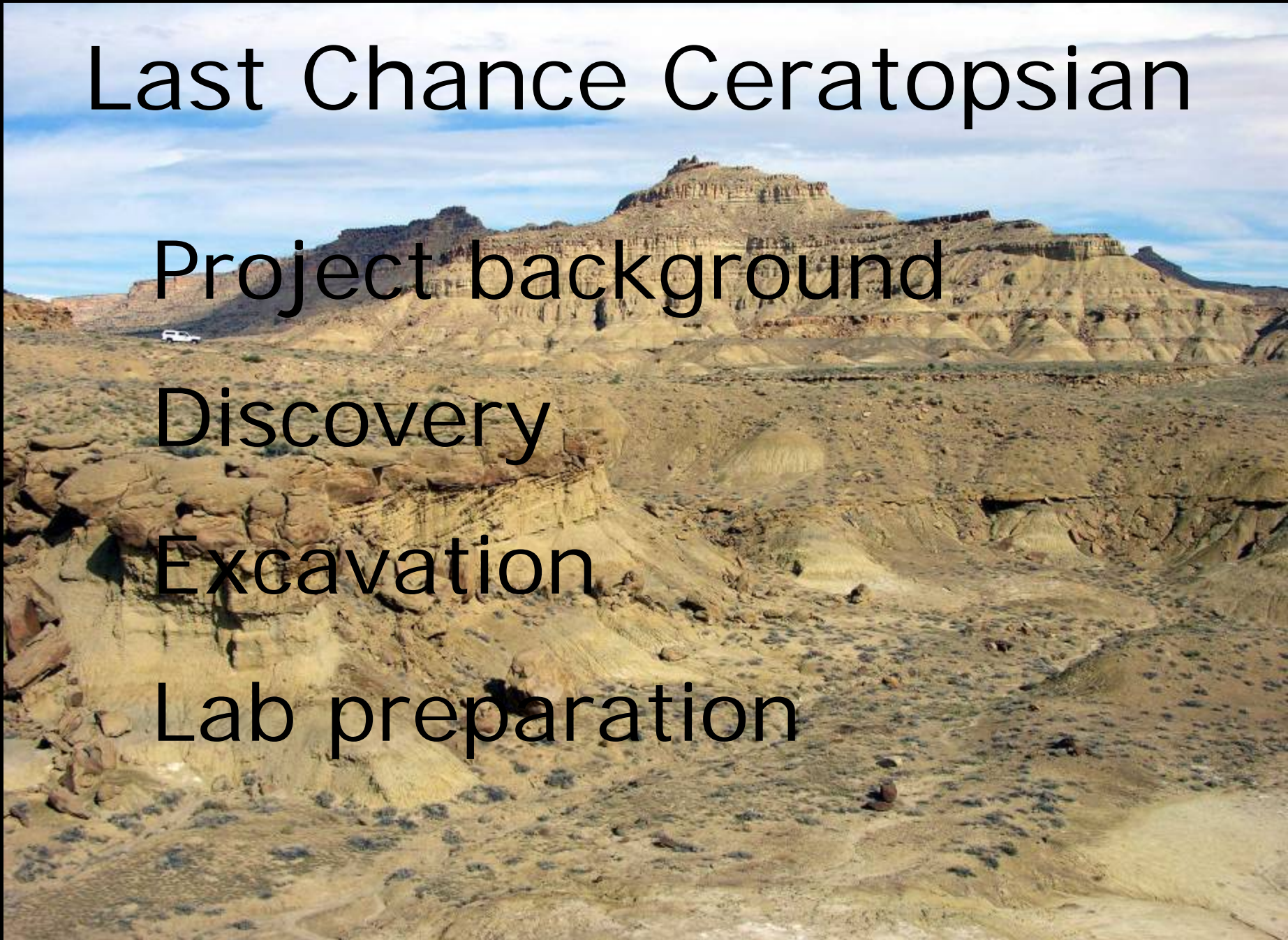
Last Chance Ceratopsian

Project background

Discovery

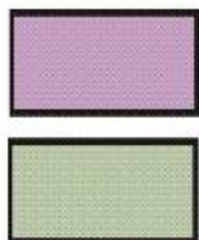
Excavation

Lab preparation





10 cm



Grand Staircase - Escalante National Monument

Wahweap Fm.

Ceratopsid skull material



Last Chance skull



Death Ridge frill



Nipple Butte skull



Pilot Mesa frill

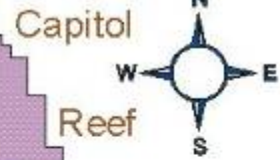


UTAH

Tropic
Bryce Canyon Nat'l. Park

Escalante

Boulder



Capitol Reef Nat'l. Park

Circle Cliffs
Escalante River
Glen Canyon National Recreation Area

Kaiparowits Plateau

Grand Staircase

Lake Powell

Kanab

Big Water

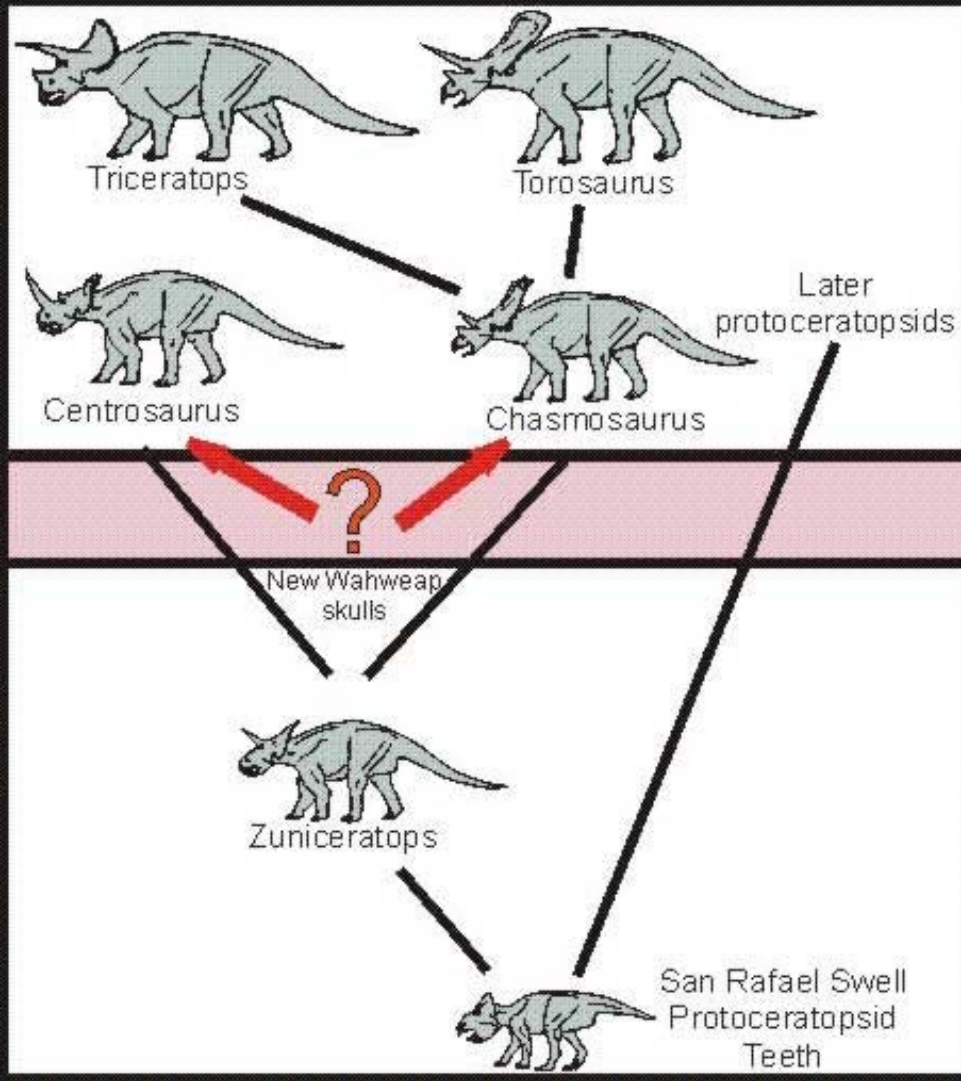
UTAH ARIZONA



CRETACEOUS AGE ROCKS IN THE GRAND STAIRCASE-ESCALANTE NATIONAL MONUMENT

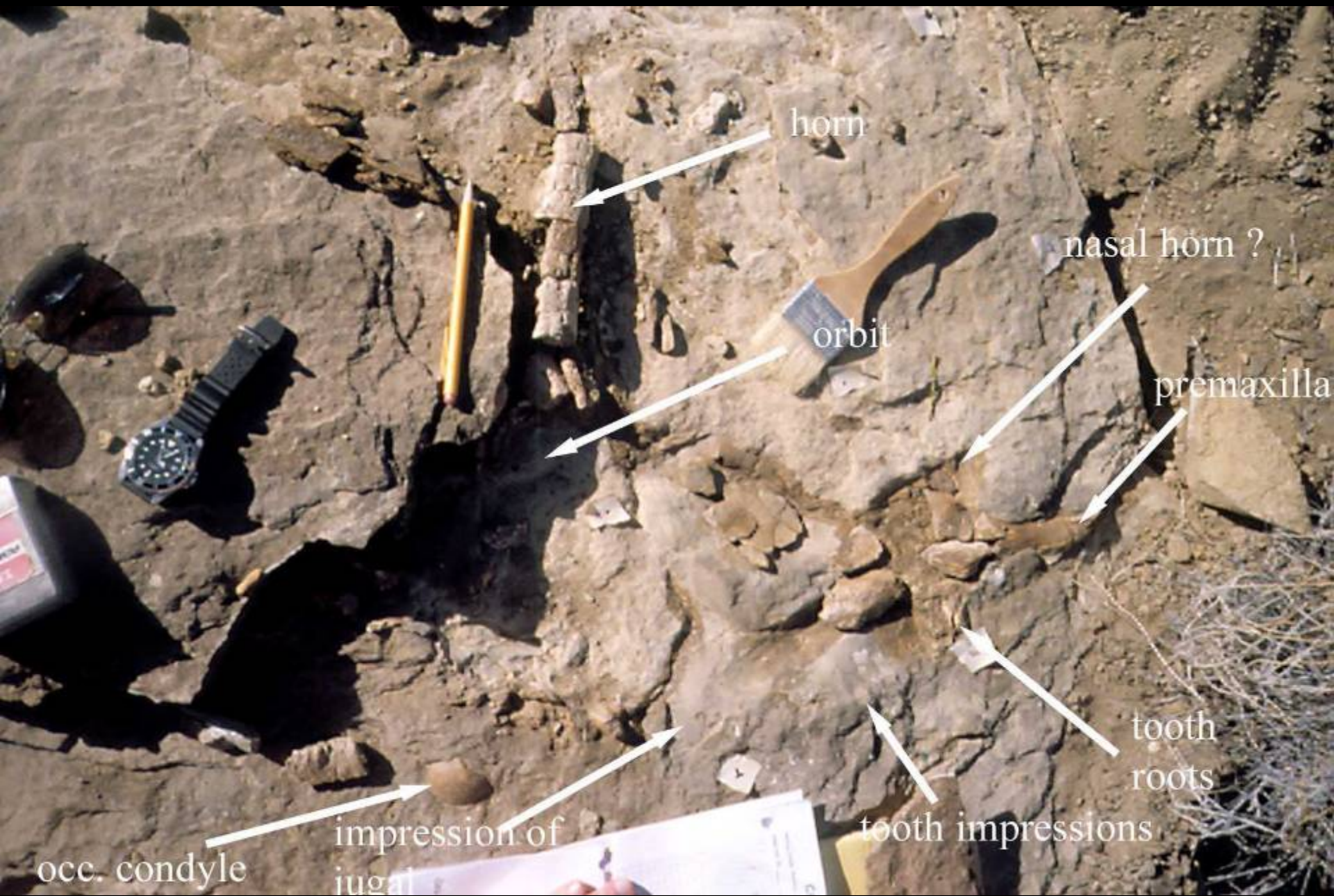
CERATOPSIDS OF THE UPPER CRETACEOUS AND THEIR RELATIONSHIP TO MORE PRIMITIVE CERATOPSIDS

MYA	STAGE	Formation	Member
70	Maastrichtian	Canaan Peak	
80	Campanian	Kaiparowits	
			capping ss
		Wahweap	upper middle lower
90	Santonian	Straight Cliffs	John Henry
	Coniacian		
	Turonian		Smoky Hollow Tibbet Canyon
			Tropic Shale
100	Cenomanian	Dakota	upper middle
			lower
100	Albian		









horn

nasal horn ?

orbit

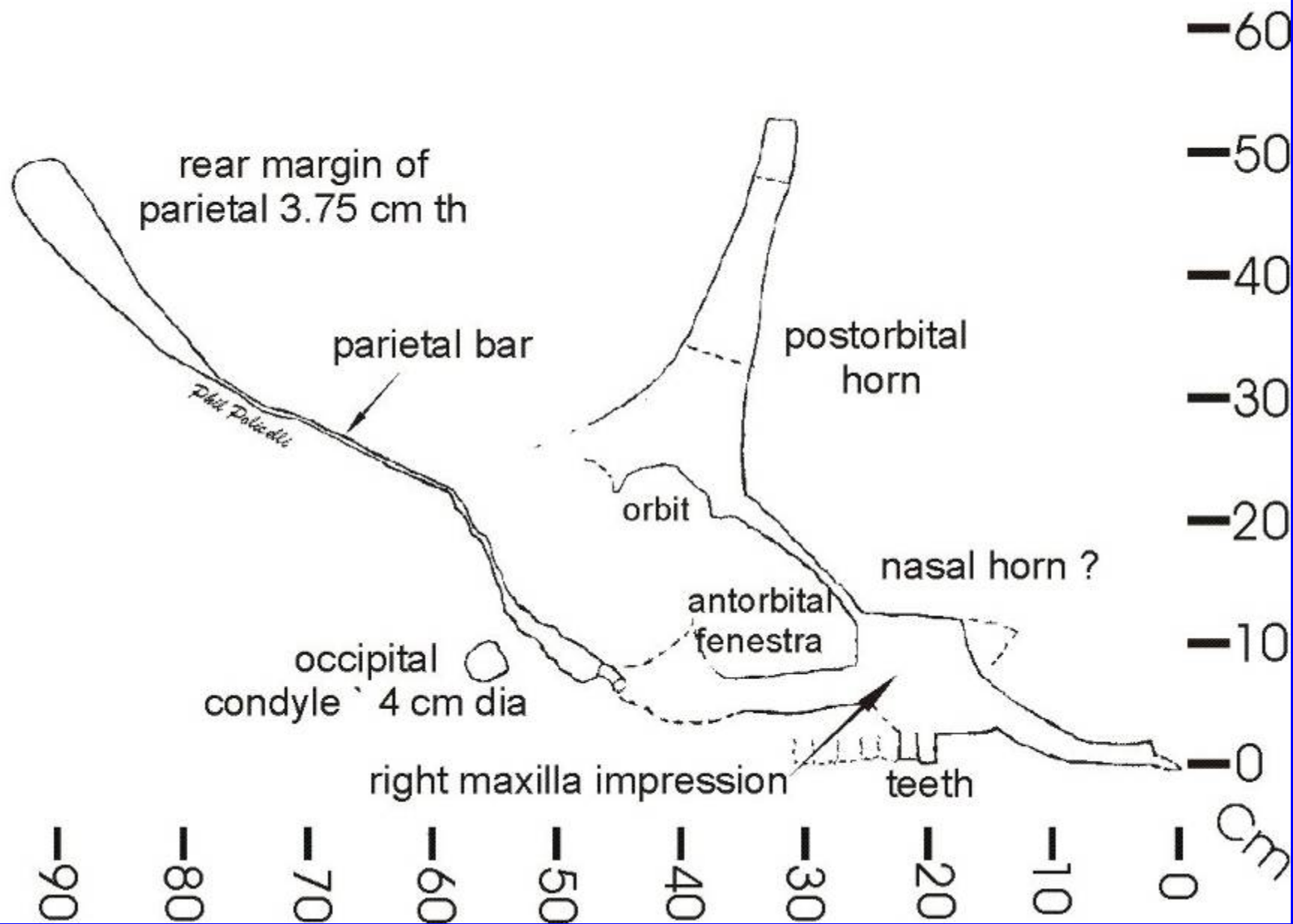
premaxilla

tooth roots

tooth impressions

impression of jugal

occ. condyle





Field Chronology

April 2002 Discovery, assessment, preliminary map
(2 days)

September 2003 Begin excavation with rock saw
(1 day)

November 2003 Rock sawing (1 day)

September 2004 Rock sawing (3 days)

October 2004 Plaster cap and rock sawing (1 day)

September 2005 Rock sawing, cargo net (1 day)
helicopter transport (1 day)

~ 100 person hours of labor

































Rock scored with diamond blade for easier removal with large air scribe and chisel



Don't air scribe rock that can be cut off!



After scoring and large-scale
air scribing



After small-scale air scribing



A close-up photograph showing a hand holding a brush with green bristles, applying a dark brown liquid substance (Acryloid) to a textured rock surface. The rock has a mottled appearance with shades of grey, brown, and green. The brush is positioned horizontally, and the liquid is being spread across the rock's surface. The background is slightly out of focus, showing more of the rock's texture.

Brushing on Acryloid to avoid consolidating the rock







Scorpion survives 15 months imprisoned in fossil sample

By GREG LAVINE
The Salt Lake Tribune

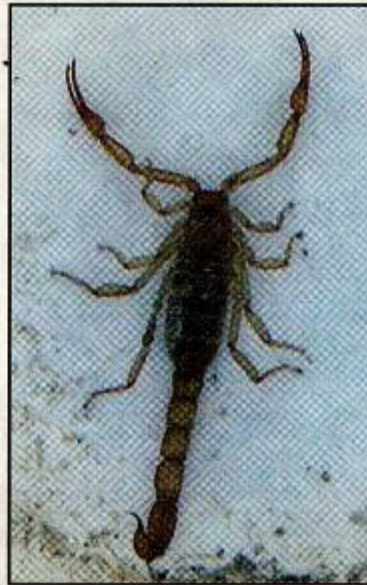
After spending two months working to free a fossilized dinosaur skull from the grip of a sandstone block, Don DeBlieux figured there was nothing left to surprise him.

But earlier this month, in a Salt Lake City paleontology laboratory, something stirred within the cracks of the rock. After a little investigation, he discovered a live scorpion struggling to escape.

"If something had crawled out during the first month or two, it wouldn't have been surprising," he said.

About 15 months ago, the scorpion apparently scurried under the wrong rock in Grand Staircase Escalante National Monument in southern Utah. The rock chunk happened to contain the skull of an 80-million-year-old, yet-to-be-identified horned dinosaur discovered by the Utah Geological Survey.

To prepare the skull for study, researchers encased it in



Courtesy of the Utah Geological Survey

This native of southern Utah turned up at a Salt Lake City lab after hitching a ride with a plastic-encased dinosaur skull.

plaster — along with the 2-inch long hitchhiker.

A few weeks ago, DeBlieux, a paleontologist, opened parts of the plaster jacket to remove the rock. As he moved to a new section, he spotted the scorpion in a

crack and fished the arachnid out.

He placed the scorpion in a plastic soda cup to take a picture, then pondered the hitchhiker's fate.

While 15 months seems like an incredible voyage, scorpions and other arthropods have ways to survive tough circumstances, said Richard Baumann, a Brigham Young University zoologist.

Scorpions can't hibernate, but they can enter a phase known as diapause, an extended sleep period in which it does not grow.

"It's possible," Baumann said of the southern Utah scorpion's extended journey.

Under other circumstances, the scorpion might have met an untimely end, but DeBlieux respected the creature's will to survive.

"After 15 months, I wouldn't have had the heart to hurt him," he said.

So the scorpion was set free in a field near the corner of North Temple and Redwood Road to face the challenge of a northern Utah winter.

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To date, 400 hours of laboratory preparation, we should be at least half way there!



Acknowledgments

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