

(Reel 14)

.... platform. And it seems to have been struck also with a soft hammer.

with this lip. But anyways this hammer was not very wide. It was struck as a

... possibly Because over there is a good burin.

It looks like a levallois point, yea.

And this is the most interesting of all. Because there is one question. It is certainly a point, but was it hafted like that or like that? Looks very much like

some we get in the Mezolithic and Neolithic at home.

Erwin Williams

Well, perhaps it will help in that ~~it's~~ // ~~it's~~ // ~~it's~~ // its position was point first

under a camel rib.

Bordeas

Under a camel rib. You know, that's all right but ~~it~~ ^{from} which side of the camel.

did ^{it get in,} the camel...

Erwin Williams

... South

Bordeas

~~This can get,~~ ^{and it can go} pretty deep. ^{Even in} ~~It isn't~~ the camel.

Erwin Williams

True, true.

Bordeas

In a way that's interesting, you know. Because it shows that ^{oh, yea,} I would like you

to find ^{others} ~~it~~ like that.

Erwin Williams

So would I. This doesn't show particularly unless you point it out, ~~but~~ the

entire base of this, all the way around on both faces, and the side, was polished,

ground, for one reason or another. Apparently not, ^{I would guess} to do with the flaking technique,

but to do with its ability to be hafted.

ce. 25.3.4.1

Bordes

That could be. Anyways that's a kind of point made with small retouch. And

these people didn't seem to ~~make much~~ ^{bother much} about retouching their points.

Drvin
Williams

No, there is no bifacial retouch in these lower levels at all. ~~On~~.

Bordes ~~There~~

~~This~~ is a kind of bifacial retouch.

Tipier a little ~~striking~~ ^{curving} - very short.

Edge trimming, yea.

Bordes

Now we get to that. That's different. That's a good ^{positive} point, ~~but~~ /

broken, ~~on knife, you know~~ - this bit. ~~all right, you know. In this bit. That.~~

Drvin
Williams

That's just a fragment of a biface.

Bordes ~~That - that's~~

A fragment of something bifacial. Something bifacial. Oh, no, I don't think so

Tipier:

~~... of~~ maybe something of a projectile point?

Bordes:

Could be, I don't know. This is a nice one. Seems percussion made, rather

than pressure. And that; that's ^{is} a strange thing. It difficult, ~~not good~~, but not ^{the casts are good}

a good point,

Drvin
Williams

That ~~wasn't~~ ^{wasn't} very good to start with.

Borde

What?

Drvin
Williams

That wasn't a very good piece to ~~start~~ ^{start} with.

Bordes

No. I can see that the material is bad material and the retouch is not very

~~easy~~ ^{easy} see on here. That I don't know what it is. It can be anything.

Byers

It looks like a ~~drill or a bar~~ ^{drill or a bar}.

Bordes

Looks more like a bad drill than anything else. Ah, here, ah, ya. Here is a ~~bad drill~~ ^{It looks more like a bad drill than anything}

bifacial tool. It is certainly not a projectile point. Probably a knife. With a

Ca. 25.3.4.2

basal end untouched,

notch, very outward. And it seems that here ~~it~~ either, they made a burin out of it or they tried to get small blades. Who can tell? It's difficult

with such things. You know, since I have seen the Japanese stuff, where they

began by making a kind of thick ~~stone~~ *laural leaf* leaves and ~~then~~ they break it one way and then

they ^{do} all this work to get small blades like that. Well, of course, you say they are

Japanese, and Japanese are always pigheaded. I wonder when I see something like that

if it is a tool or ^{if it is} a core. You know, you never can tell. That is not too good.

That's a ^{striking} ~~faceted~~ platform with a little hinge ~~but~~ anyway it was not ^{done with} a stone.

You never get this overhang with a stone. But it was a hammer which was medium hard,

not too soft.

Orwin Williams

This apparently has had some sort of gouge or leading edge ~~made~~ *maybe*

Bardas

Oh, yes
Oh, ~~no~~, a kind of scraper. *anything, you know* ~~You know~~, Scraper is a good word because it does

~~not~~ not mean much. It ~~kind of~~ *has a* very wide ~~...~~ *acceptance, platform* That's a very nice *positive*

*low 9.6
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point. I don't think that this ^{is} fluting. It could be the face of the flake and

it went into something hard. And that is certainly probably not a burin. I think

rather it went ^{against} ~~into~~ something hard, camel skin, perhaps, I don't know. What was

with it?

Orwin Williams

The horse and camel.

Bardas

~~the~~ *Horse* camel. Ah! ~~But no~~ *against* it went ~~into~~ *alone or a* stone or something like that.

Ah, that's another thing. That's a small flake with platform which ~~is~~ *has* nothing

special some facet of that. ~~And it's~~ *it is* And difficult to tell, ~~with~~ *what was tried* with this one.

Ce. 25.3.4.3

Could be stone could be something else. But an interesting thing is a very outward

truncation
~~concation~~, $\phi/\#$ of the right of the burin and very very outward by small retouch,

no work here, It's not a borer. It seems that the ~~concation~~ *truncation* was a one. Nothing else.

I don't know perhaps it was two.

Irwin Williams No, a concave scraper.

Bordes ~~Same perhaps~~ *It's* not a scraper it's too *outward*. It has something to do with

camel hunting, I don't know. Other comments from other people?

Crabtree ~~This is Don Crabtree~~. I would assume ^{that} the casts are replicas, as near to possible *to the color* in ~~coloration~~ of the material themselves.

Irwin Williams Approximately.

Crabtree And no doubt it is *chert* flinty material. There is something ~~at~~ little unique in the way of having, in Mexico, this sort of thing, ~~like~~. Nothing ^{but} of flints and cherts ^{with} all

of obsidian ^{that was} possible available ~~perhaps some of them~~. I don't know what the dates of vulcanism and that sort of thing are, but it seems characteristic ^{with many of} of ancient man ^{is} material that ^{he} they wouldn't touch obsidian when it was right in the valley above.

floor below, ~~the~~. ~~These~~ I'm speaking from ^{of my experience with obsidian in} Southern Idaho ~~in my roving around and~~

~~not that~~ ^{reason} For some ~~purpose~~ they seem to desire these flints and

cherts ~~with~~ ~~is~~. ~~There~~ ~~with~~ ~~this~~ I think Dr. Bordes had made all of the comments

necessary, ~~at~~ ~~in~~ ^{But,} this group ~~proves~~ proves that they had some well controled,

well defined ~~flakes~~ flakes. ~~But when they took their tools back out~~ ~~new~~

Co. 25.3.41.4

~~... tips. They must have been taken along when they were taking the next ...~~
~~... elephant digging it by the tail. They took ...~~

But there is one little flake here showing a hinge fracture, ~~on this surface~~. This shows a little specialized ^{re} touch of spacing, ~~there~~. I mean, there is not enough of these ~~any~~ ^{to show} uniformity, ~~but it indicates that it was~~ used scraper-wise in that area ~~there~~, but ~~it~~ ^{show} these three ~~showed~~ ^{show} the position of, ~~the tool~~

~~each time rather than~~ ^{creating the pressure tool} percussion or ~~a~~ ^{indicating} function ~~on this flake here both ways.~~

~~on this side~~ ^{indicates} of a bifacial flaking ~~on that one there as well as~~ ~~Dr.~~ Bordes ~~has explained~~ ^{this one shows a} ~~there is~~ bifacial retouching, ~~on here~~. This one appears to have been ^{abraded} ~~abraded~~ on the ^{tip} ~~point~~ like it may have been one of the gravets, ~~one of the little ones here.~~ ^{or a little engraver.} ~~or gravets.~~ That is all I have to say on this, ~~sort of thing here.~~

Erwin William

Do you have any suggestions how the retouch on these later points, well this particular later point, would have been done?

Crabtree This appears to have been done by pressure on this side, ~~of this one here.~~ However it ~~doesn't~~ ^{doesn't} have nearly ~~the~~ ^{as refined a technique!} ~~abundance.~~ You can see the little step fracture where he hasn't ~~the~~ ^{applied sufficient pressure and this character} ~~pressure~~ ~~and~~ ~~that~~ is not common with the percussion ~~technique.~~ ^{technique.} He has undercut and left fairly heavy deep bulbs ^{on the edge} ~~there~~ which produces quite a sharp edge ~~on that particular one.~~ This is, of course, bifacially done. But it is ~~abraded~~ ^{quite heavily abraded} on this side, quite heavily. ~~With~~ ^{in this manner here} this edge ~~on here,~~ ~~this~~ ~~would~~ appear ~~this~~ ^{to be the tip} ~~is no doubt~~ ~~the~~ ~~shift~~ of the tool ~~from this one over here~~ ~~and~~

And, again, we have these left-handed ~~raspels~~ ^{back}, ~~And slightly a retouch here on this~~ ^{There is a slight} ~~the~~

Ca. 25.3.45

edge of this one. ~~It looks like it may have been~~ ^{showing indicating it may have been} utilized from something else,

But from no more than is showing here, it is ~~most certainly~~ ^{appears pressure was applied,} away from the ~~point~~ ^{tip}

and back in again ~~away from that side.~~ ^{on the opposite side!} This one ~~here~~ is, however, in reverse. I

mean it is going ~~the same direction~~ ^{the flakes are directed} but away from the ~~point~~ ^{tip} which is a very unique

~~thing~~ ^{accomplish} without sniping the ~~point~~ ^{tip} off. He took very wide flake ~~caaar~~ ^{across} ~~here,~~ ^{the surface}

The normal ~~thing is~~ ^{reaction} when you push ~~down~~ ^{ing} this much you are going to get a shearing ~~of~~

~~this sort of thing~~ ^{of the flakes} but because you must keep your ~~right~~ ^{pressure} away as he did in this manner,

~~away~~ from the tip. But ~~instead~~ ^{specimens} with this ~~one~~ ^{it's applied pressure,} he reversed ~~towards the~~ ^{base.}

He may have carried his finger out ~~and used~~ ⁱⁿ this manner ~~type~~ ^{and used it as a} of this sort of

support, ~~in doing this,~~ ^{for the tip!} this is well supported ~~without~~ ^{and} losing the tip. This

certainly does appear to be pressure ~~working~~ ^{worked this} on ~~that~~ ^{the} particular point. ^{I'm glad you brought that one up.} Don't you

think; Dr. Bordes?

Bordes. Ah, yes

^{Survival} ^{Wilson's} WELL, do either of you have any comment on the kind of tool that ~~was~~ ^{would have been} used to

pproduce this rather large flat ^{retouch or} chipping on the biface here?

^{Capotier} ^{appears to be a}

Billet, horn, wood. Something like that.

Bordes Something like that, yes.

Jelinek

~~Jelinek~~. I have a question for Tixier or Bordes. How similar is that small stemmed point to an ~~Italian~~ ^{Italian} point ~~an Iberian point~~ ^{(Iberian) chip with end}

Bordes

To a ~~point?~~ ^{Italian} To an Iberian point.

Jelinek

To a ~~point?~~ ^{Italian} To an Iberian point

C. 25.3.46

Bordes: ~~no, it is not the~~
No difference. Same technique.

Jelinek: What would ~~you~~ the distinction be?

Tyler: The distinction ^{is} at first the stem is ~~narrower~~ well-shouldered,

you see. It's very well shouldered in an ^{alberian} Italian point...

On one side yes. Here it is something like ^{an alberian point - but no.} ~~just~~...

~~There is something of~~ ^{Crabtree!} This ^{is} just a comment ^{to} Cynthia, ~~and with this ancient~~

~~and~~ ^{with the} Paleo-Indian sort of thing, ^{we find} occurrences of ^{the} back-handed technique, ^{and} yet, in ~~the~~

~~the~~ recent material, you see none of this, ~~and~~ ^{it} is apparent distinctive

technique was used ^{by Paleo-men in your site} ~~of this~~ and ~~even~~ appears ~~here~~ on the two retouches that we find

in ^{Solutrean} ~~solutrean~~, ^{that} ~~we~~ find only two, but yet they are distinctive and different while

the rest ^{of the specimens show} is very regular and very uniform, ^{flaking} ~~but whenever this~~ this retouching

was done ~~way~~ they ^{applied pressure in the} used this direction ^{of} towards the ^{tip} ~~point~~ ^{and} away from the

base.

alving

Mr. Crabtree, ~~this is living specimen~~, in view of the fact of your earlier

observation of the hand-holding the piece being ^{flaked} ~~flaked~~ ^{does} most of the work, do

you suppose it's possible that they have here a tradition ^{of} holding the piece being

worked in the right hand and holding the tool in the left. This done by right

handed men.

Crabtree:

This I think Dr. Bordes should know. ~~He~~ ^{He} is ambidexterous, and he can

work ~~from~~ ^{them} both ways, ^{and} ~~while~~ to change angles from one ^{direction} to the other ~~and~~ your strength

is in your right arm and that's where you actually ^{use} ~~use~~ your strength, ~~you will rest~~ ^{use it.}

C. 25.3.47

~~against the~~ else. You can't free ~~hand~~ hand, hold this, ^{hold the artifact} so you must ~~put~~ ~~it~~

against a log or some ~~other~~ part of the body. ~~It is naturally~~ Right handed ~~or persons~~ ^{naturally} ~~is~~, you will thrust and pull inwards, ^{toward the body when applying pressure.} But to push away from ~~you~~, ^{the body one} you lack S

~~control~~ ^{of flaking} ~~is~~. ~~While~~ you can pull something towards ^{him} you very carefully and

very gradually, if you understand what I mean. I mean, ^{to exert pressure} ~~this pointing something at~~ ~~toward the tip~~ of the point ~~and away from the body~~ is ~~not the~~ ~~normal thing for~~ ~~this end being able to hit exactly the same spot~~ ~~away is much more difficult.~~

~~of a right-handed person.~~ Therefore, I assume, the worker was ^{either left-handed or ambidextrous, needed} then bring ~~it~~ close to a certain point. Another thing ~~is~~ the accuracy ~~of~~

~~removal would require seating the tool each time pressure was~~ ^{for} flake ~~on here~~ that you do have set your tool before you apply your pressure, ^{to} So to ~~applied and this back-handed method would make seating~~ ~~avoid~~ ~~one of the greatest of ease if you are~~ ~~right handed,~~ ~~rather~~ ~~rather tiring for a right-handed person.~~

~~think that your work will point for~~ the mechanics of the flint ^{it is more} ~~is another thing~~ ~~likely to break when pressing toward the tip~~ ~~rather than~~ ~~on here~~ is that you wouldn't break away from the point ^{toward you} ~~on here~~ because you have a ~~toward the base of the the point - or toward the body.~~ ^{Phis back-handed technique,} ~~greater possibility of breaking it.~~ ~~It takes greater control for shaping~~

with this particular one, they were ^{applying pressure} ~~going out~~ in the direction of the ^{up} ~~point~~ rather ~~than into the body of the artifact.~~

~~then is the mass.~~ Now no matter ~~whether~~ ~~percussion or pressure~~

^{is used,} we have ~~to~~ to keep the blow towards the center ^{of the artifact}, otherwise we'll ^{break} ~~it~~, ~~it will~~

I mean ~~they would pop in~~ at one end or the other. ~~They would pop off.~~ ^{Well the same} ~~The same~~

^{is applicable to your pressure work.} thing with a tube ~~press~~. By using your right hand for pressure I just don't

feel that you can alternate it and use a left-hand pressure ^{with control}

It's just like writing ^{almost} and these scars are just as identifiable as penmanship. You'll

have certain styles whether it is ^{Palmer} ~~power method or~~ ~~it was pressure.~~ ^{more pointing}

like ~~that~~ ~~thing~~ there. ~~That~~ ~~thing~~ when you develop these rhythms and the

10.25.3.4.8

a right-handed technique, 12
to change
to another

muscles develop for ~~that~~ it is very very difficult. It would take me two years to change from one style ~~again in a matter of a few minutes it may take many~~

~~hours, and many weeks to~~ gain. This particular ~~work~~ Helgap *material & technique* yesterday, Dr Bordes, made some. I can't define ~~it~~ yet. ~~Dr Bordes~~ strictly ~~silutian~~

flaked silutian type artifacts with and very regularly ~~out of thing~~, fairly deep bulbs ~~the way he~~ *the* applies his tool ~~the way he~~ *applies* it to the edge of the piece of flint, ~~to~~ *determines*

the popping off ~~and~~ the feathering ~~on here~~. I ~~have~~ *out of the flakes.* tried ~~at~~ *to use his technique* last night, just trying to ~~show a little of the ripple~~ *the flakes would* /sort of flaking. ~~to~~ go clear across.

and take the ~~points~~ *and take off the other side of the artifact* clear off the other side. I mean, I just couldn't get the feel of ~~it~~. These are the things that are distinctive with pressure retouching probably

more ~~than~~ percussion. However, I think, that at some later date, ~~I think Dr Bordes~~ *and I think Dr Bordes* would

that agree certain percussion techniques ~~are~~ are going to ~~get~~ *be as identifiable as well,* ~~they the~~ *with further work by,* as well further work ~~on it~~ ~~that~~ and with studying other collections ~~that~~

Bordes: Oh, yes, yes. *Crabtree:* Not from one ~~individual~~ *group*, because we have millions of people ~~that~~ whose techniques we are trying to identify ~~that~~ *and* there may be almost ~~that~~ many techniques as there is with handwriting. ~~To get~~ *maybe we can get a* character analysis here from ~~some of the~~ stone work.

Bordes: Well, any other comment on this collection?

Byers: ~~Byers, speaking~~ I think it's very interesting ~~that~~ Don Crabtree has picked up ~~the~~ concentration of left-handedness ~~in~~ *with* this ~~early~~ material. The preliminary indications from ~~Piava Kound~~ *Tetahuacan (ca. 40)* which is only about 40 miles away, ~~from Mexico City,~~ *from Mexico City,* Cynthia?

Ca. 25.3.4.9

Orinon
Walliar

About 60, I believe.

Byers

~~Is~~. Is that the population there is ~~very~~ all very inbred and this con-

centration of left-handedness may coincide with an inbred population.

Crabtree

This ~~and~~ ^{or left-handed work} dexterous ~~point~~ is quite a rarity. Extremely unusual. It is one

of the first fine examples I have ever seen ~~with~~ ^{showing} this precision and control. I think

this is a classic in ~~demonstration~~ ^{demonstrating} this particular type of technique. I haven't

anything here that compares with that. ~~I'm~~ ^{I thought if we were that something} showing different techniques ~~in this~~

in this

array ~~that I have left over~~ ^{would demonstrate} on the table, ~~that you probably all examined,~~

~~many different techniques~~ ^{some of these things on here.} But, ^{must} certainly not with the accuracy and precision ^{shown}

~~in the making of that~~ ^{of that particular artifact.}

Wheat:

I have one question. ~~do you mind going on with that~~

I was wondering, Don, almost all pressure flaking that I have ever done or ^{and consequently} that I have ever seen done has been done against the palm, on the force side of the

blade from the chipper. Have you ever attempted to do flaking on the top side of

the blade and if so what kind of control ^{do} did you get on that?

Crabtree:

Well, to answer your question Joe Bend, when ~~I used this~~ ^{I tried flaking from the top side} ~~the~~ ^{of the artifact, I used a} ~~popping~~

~~motion up and~~ ^{from}

out ~~of~~ ^{from} the edge, and I do use that ^{technique mainly} ~~sort of thing~~ in platform preparation ~~mainly~~,

But to do an alternate ^{opposite on the top} work, even to take ~~off~~ a right angled edge ~~off~~, it's much

easier for me to ^{reverse sides of the artifact rather than} ~~revert to~~ ~~try to give it this~~ back hand ~~and back~~

~~and forth~~. However, you would hold ^{the perform} it a little differently in ^{the} your hand, if you

were going ^{to flake from the top side} to do ~~this sort of thing~~. For instance ^{hold the} with a point, ^{like this work} and backwards such

Ca. 25.3.4-10

*Grace
insert writing
on back side*

as that. Well this would be ~~it~~ ^{easier} to demonstrate. ~~It~~ ^{It'll} be careful, Cynthia.

~~It is difficult to~~ ^{when working on the top side} correct an angle ~~of such and then here.~~ Now, if we would use ~~that~~ ^{this technique} on ~~this side~~ ^{the top side}

~~here~~ and have a leather pad ~~of~~ ^{the} to protect ~~the other side~~ ^{the}, we can catch ~~these flakes~~ ^{the removed} between the ~~pad~~ ^{the} and the ~~ark.~~ ^{of the flakes}

and we'll end up with little tiny step fractures on the ends, ~~without them terminating~~ ^{ion}

~~because~~ ^{we} you must hold ~~it~~ ^{the tool} underneath the leading edge in order to get ~~this~~ ^{the flakes} to ~~terminate~~ ^{feather}.

~~terminate out like that.~~ ^{the act with the surface exposed, the tool} So to hold ~~it~~ ^{it} just with the bare edge ~~down here,~~ ^{down here,} we will

~~will~~ waver and we can't get this type of a snap ~~that~~ ^{which} was, no doubt, used to terminate these ~~flakes.~~ ^{flakes.}

~~because~~ ^{For it} this takes a fairly heavy bite ~~and if you will~~ ^{on the edge to pop them out from the edge upward,} notice extreme sharpness, ~~of the edge,~~ ^{of the edge,}

~~No~~ ^{of this artefact:} crushing of this edge, but very very well done and the angle, ~~is~~ ^{of the flakes} quite consistent

~~to lead the way.~~ It may ~~not~~ ^{possible} be impossible ~~or~~ ^{that they} them devised ~~some sort of method~~ ^{with the stem}

~~then~~ ^{of the stem} holding, in this way and following ~~this~~ ^{them} and they could have developed ~~this sort~~

~~precision~~ ^{in flaking this way,} ~~and~~ ^{maybe a} it is not necessarily ~~the~~ ^{the} left handed technique but

it is one that goes from the base to the point, on both sides, ~~and this may show up~~ ^{and it is a holding}

~~in other styles of work,~~ ^{maybe, some days} ~~and we'll~~ ^{we'll} know more about this. ~~the~~ ^{the} angle ~~is~~ ^{is} here

~~is~~ ^{is} very good to keep a good straight edge ~~but~~ ^{but} they didn't do it that way.

With this one ~~they~~ ^{they} did it only on this side here, because you can see

the overlapping of the ~~series of flakes~~ ^{series of flakes} ~~sides~~ ^{sides} and it demonstrated they only did it from

one side rather than an alternate, ~~otherwise~~ ^{opposite} we get a sinuous effect on ~~the edge~~ ^{the edge} ~~edging.~~ ^{edging.}

~~of that particular sort of thing~~ ^{not the same thing} ~~yes, yes, yes.~~ ^{yes, yes, yes.} ~~That is quite different in direction.~~ ^{That is quite different in direction.}

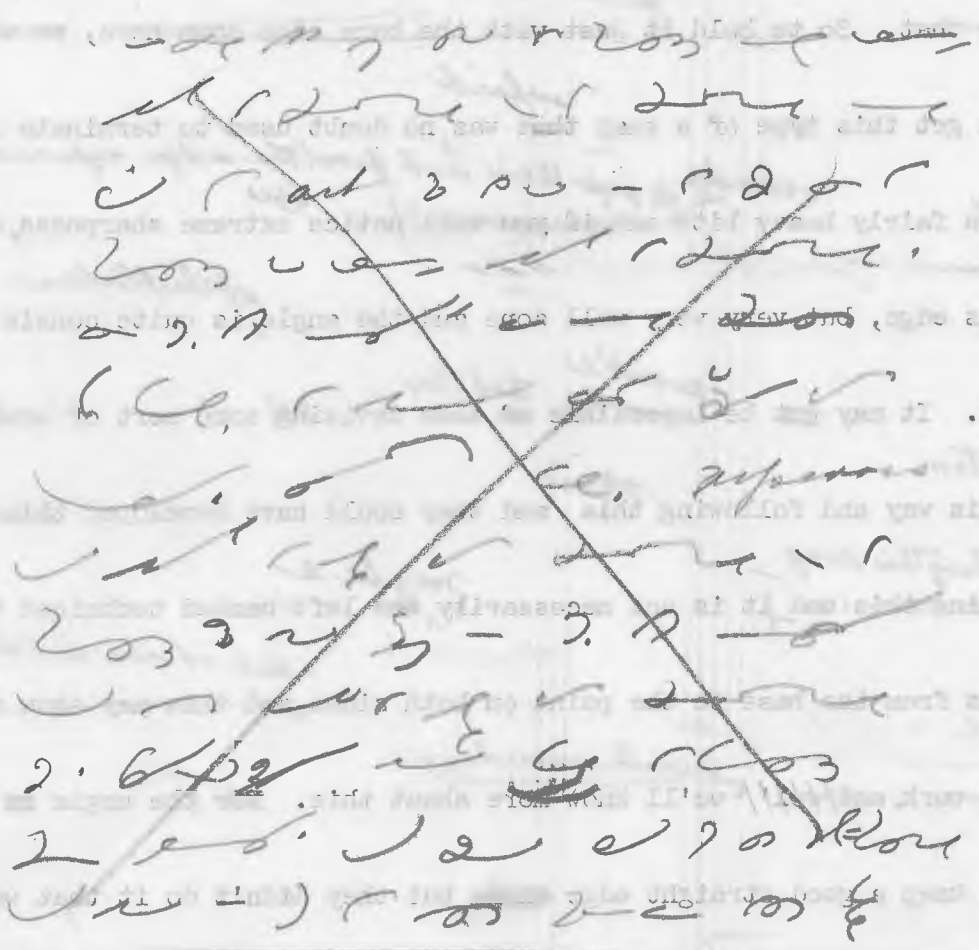
~~yes, yes, the same thing.~~ ^{yes, yes, the same thing.}

~~This was the last series on here when~~

Vickers

Co. 25.3.4.11

Using the technique on the top side



The fingers must hold the artifact so they are in the way where the flakes are removed toward the fingers. When using this method, one must flake by placing the tool on the sanderside of the leading edge, pressing upwards and toward the tips of the fingers. The flakes, if you are successful in using this method, will go into the tips of the fingers. If a pad is used, it will prevent the flakes from terminating and we will end up with step fractures and it will not have the character shown on these pieces.

~~On the face, there is no bulb direction.~~

Bordes.
Tapien
Crabtree

Well. This was the last series on here. But it's quite different. The same...

direction.

This to have happened here between 3500 and 5000 B. C. This refinement technique to have appeared

is quite different and it seems like it is an original. It doesn't show up very

many places ~~at~~ ^{maybe} may be other than in this particular geographical area. It is

quite an uncommon ~~sort of a thing with this very distinctive~~ ^{technique and} ~~thing~~ ^{and, perhaps} could be ~~followed~~ ^{traced}

much easier than some of ~~the~~ ^{the} random ~~things~~ ^{flaking} which ~~is here that~~ ^{which} doesn't

show ~~the~~ refinement. This sort of thing ~~is here~~ ^{mainly pressure} just shows ~~trimming~~ ^{trimming} rough surfaces, ~~off~~ ^{off}

~~without any regularity.~~ ^{without any regularity} ~~material.~~

Alan Smith

Prof. Bordes. We have three other tables to look at. Before you we have

~~Goldschmidt's~~ ^{Phil Smith's} material. Then we have ~~Shimbea~~ ^{M. Cambier's material.}. And then ~~finally~~ ^{finally} Don

Crabtree has laid out a sample of artifact of different techniques.

Bordes: All right.

Phil Smith

~~Phil Smith speaking.~~ These collections are all from upper region ^a place called

Comonbona far from Aswan. There are 5 collections here ~~5~~ ⁵ industries ~~and~~ and they

represent the Egyptian equivalent of the Upper Paleolithic. They were found on

a silt plain on and below the surface and I'll describe each of them in very brief

detail and roughly the order in which they come. The oldest dates apparently to

about 16,000 B. C. That's the one on my left and the youngest ~~roughly~~ ^{to roughly} about 10,000 B. C.

6.25.3.4.11

~~at~~ the end of the Pleistocene. This is an industry which is curious because it hasn't

been known in Egypt before. It seems to have been found recently in the ~~Wadi~~ ^{Wadi Halfa} area.

of Sudan by the New Mexico and Colorado groups. There, I think they call it the

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P. 2

~~Heultrin~~ ^{Nalfan} industry. It's made using the levallois technique. The micro levallois

technique of small prepared cores very often with the ~~chapeau de gendarme~~ ^{chapeau de gendarme}

striking platform ^{effect,} type, which I mentioned yesterday to Gerry Epstein. Associated

with this rather ^a archaic technique are polished bone needles, awls, and very well

developed grinding stones, as well as burins and end scrapers. Should we talk

about this one first and then I'll go on to the others later.

Bordes:

^{As you like} ~~is right.~~ ~~Bordes~~ speaking. I think here that most of the speaking will be

made by Tixier who knows African material much better than I do. However, there

are certain Upper Paleolithic similarities. But for this first culture, I would

like to point out this small nest of ^{some of these} levallois cores which made flakes which were

no ^{can} bigger than a nail and one ~~could~~ wonder what could be the use of such flakes.

Sometimes, in the Mousterian, we find, very small but never as small as that. About

this size is the smallest I know in France. Now to Tixier.

Pipier

~~Tixier speaking.~~ They are very, very little such levallois cores, in North

Africa particularly in Upper Arterian. Arterian of North Africa, ^{there is of Arterian} most flakes are

the levallois technique and they are very, very ^{little} different cores like this, but the

thing is striking me, I think it is the first time it was found, the levallois

techniques, with needles and bones and worked bones and it is very very interesting,

And there is a

question. Do you think, Philip Smith, these men are like in North Africa with ^{suppose}

Neanthethral men or ^{almost, like them}

U.S. 3. 4. 13

Phil
Smith
Orwin

We have no clue at all. No skeletal material were found with it.

~~Irwin speaking.~~ I have a comment. We found a jaw, homo sapiens, associated with this sort of thing

Tixier

I would think so.

Yes.

I would think so.

Orwin this Jaw a bit ~~of the position.~~ with a bit of care.

Phil
Smith

Perhaps the unusual feature about these Levallois cores is they are faceted at the bottom. And I ~~don't~~ don't know whether that ~~would~~ was done to form the bottom of the flake or whether it was used as a technique for resting the core or to strike it off. In other words to give it some *firmness* at the base.

Bordes:

For such a small flake I don't think that it was necessary to rest ~~at~~ the core on something because you can strike it very well in your hand.

Tixier (in French) Philip Smith

Bordes:

So we finish with this one ~~here~~ ^{now} and go to the next one, ^{which was} found at the base of a stratified site in a silt ~~base~~ ^{here in the middle} this is the lower industry in a stratified site which had two industries. This is the upper industry. This ~~is~~ ^{seems to} dated about 13,000 B. C. and as you can see it is a highly microlithic industry. A large number of retouched ^{packed} blades, blades and a good number of micro burins. There is also a ^{few} number of true burins ^{on} various types ~~and~~ truncature, dihedral ~~on~~ breaks so on such as this. Cores are all small unusually, ^{the materials} they are made in exotic materials

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that come from the bed of the Nile. Agate, chalcedony and ^{various} ~~various~~ others fossilized ^{several} wood among other things.

....

That's a ticklish point ^{I had been (Sicilian) ~~calling it the Sicilian from~~ ^{ch sp} ~~calling it the Sicilian from~~ ^{Jara} ~~calling it the Sicilian from~~ ^{Sicilia} ~~calling it the Sicilian from~~ ^{Sp.} ~~calling it the Sicilian from~~ ^{Sicilia} where}

it is found. Tixier and I have just about decided that it is probably an eastern relative ^{of} the Northern African ^{Ibero Maurusien} ~~....~~ which is better know as Tunisia and Algeria.

Bardas I'm quite sure. It could be.

Phil Smith Perhaps you can comment on this.

Alficed I'm quite sure because, there are ^{two} ~~two~~ which are very characteristic of ^{Ibero-Maurusien} ~~Lower Magdalen~~ and which are, like this one, little bladlets. Little ^{packed} ~~blank~~ bladlets

with their striking off a ^{micro} ~~little~~ burin, a little one, ~~we~~ ^{peignant} call this ^{triedre} ~~triedre~~

in France ^{and} in North Africa ^{and in France point oblique} ~~....~~ ^{it has} ~~....~~ ^{two names but I think peignant triedre is better.} ~~....~~ ^{Ibero Maurusien}

^A and this is a regular characteristic kind of technique in ~~either~~ ^{Ibero Maurusien} ~~Magdalen~~. Usually, removing the flaking of micro burin is the preparation of ^{truncation} ~~truncation~~ or geometric

neolith but here it is not a preparation it is a finishing ^{tool} ~~to be~~ more pointed, more

sharp, you see. And there is also what I call ^{Ouchtata} ~~....~~ retouch, because of

^{Ouchtata} ~~....~~ in Tunisia. It's a very, very little retouch, very short one-sometimes

a little abrupt but often a semi-abrupt, sometimes ^{never} ~~neither~~ you see and it is a

very very characteristic retouch of the ^{Ibero Maurusien} ~~Lower Magdalen~~. And this retouch very often

begin near the bulb without striking off the striking platform near the bulb and

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it became very narrow and very thin and disappeared before ~~the point.~~ Before the distal end of the bladelet. Excuse me for my bad English. It is very difficult

for me. It is very difficult for me. And also there ^{it} seems there is ~~statistical~~ ^{balance} of these flakes ⁱⁿ very near, ^{it is} very close, ^{it is} very like North Africa ones from ^{Algeria, Tunisia} and Morocco.

I'm sure (French)

Phil Smith

He says, ^{that} they are not the brothers of the ^{alber Mauriciens,} ~~English~~ they are the first cousins. Two little things I'll point out. ~~The/very~~ There are very few true

^{microblades} ~~micro blades~~ on the acute triangle, trapezes, half circles and segments of circles they are very rare ~~in~~ ^{in spite of the fact that the site was screened.}

Bordes

I wouldn't ^{would hesitate} ~~want~~ to call this segment a circle

Just barely ^{if it is round.} Barely. It's more like a true convex truncation. ~~It's more like a truncation.~~

Tikier:

Yes, When the bulb is not removed, there is no pressure, no segment. ^{But} When

there is no bulb and no striking platform and retouch all along ^{here}

[→] This one is retouched. ^{a little bit of the bulb}

Phil Smith

Perhaps you can mention the ^{Pointe de La Mouillan}

Tikier

The ^{Pointe de La mouillan} one, oh, yes ^{there are many things} ~~a funny thing~~ about this. Here is, you see.

not a good one, a

.... bladelet... ^{a little bladelet, thin one, but backed} ~~with the retouch~~ and then, with the removing

of the micro burin and these I call these. ^{point de La Mouillan}

It's very important because it's ^a characteristic to ^{of} and we can easily ^{gain} ~~make~~ experience

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from *Pointe de La Moullot.*

I made a very good number of points. It's very easy.

Bordes What else.

Phis Smith

The other thing is. ~~Some speaking.~~ The other things ^{that nuclei} are all the ~~nuclei~~ recovered are very small in fact there is nothing much which is as large as these, ^{from} which undoubtedly they were struck ~~from~~ in the first place. In other words they have all been worked down to very small proportions.

Bordes

Here is an amusing thing. That this micro burin of this culture is bigger than the levallois core ^{of the older culture.}

Crabtree

~~Phis, excuse me, Crabtree speaking.~~ They do show a great deal of refinement, ^{of removal of blades,}

~~in their core technique with the removal of these blades. This one here.~~ This

thick blade was removed from the core but it also took ~~off~~ the flake scars from removal

of additional burin flakes, but they do show a great refinement ~~in this~~ ^T the thermal

treatment is very evident in this array of material. One of them here ~~of this one~~

particularly ^{shows} the changing ^{of texture & color} of the chalcedony, which is a ^{very} nice change. Also ~~the~~ the

distal end shows ~~the~~ the facet prior to heating ^{and} ~~show the distinct~~ ^{altering}

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