Terminology of Flint Working

Some of the terms that I am going to use in the following article on flintworking and flintworking techniques will be outlined alphebitically and we will start with the angle of impact that will be the angle made at the point of striking by the path of the precuss ion tool with the surface struck. That could be by a billett or a club a small stick of wood used as a precussion tool for the detaching of flakes from the objective piece. The resulting flake will have what is known as a bulb of precussion, the bulblike protrusion appearing on the inner surface of the flake at the point of impact. That will produce what is called a concoidal fracture or a shelllike fracture having elevations or depressions like in the form of the half of a bivalve shell applied principally to the surface produced by fracture. The resulting piece, or the necueli is caled the core. The core is more or less rounded and dressed block of flint with a striking platform from which flakes may be readily removed by precussion and pressure. The material is called cyptocrystalline, a rock who structure, tho crystalline, is so fine that no distinctive particales are recognizable, except under the microscope. There is a direct or free hand method of flaking by precussion in which the objective piece is held in the unsupported hand, the blow being supplied directly by a tool held in the other hand. The other method is a direct rest, the precussive flaking technique in which the objective piece is held on an object at a rest and struck directly with a tool.

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The flake is a think chip-like or scale-like layer of flint detached by the applied force , Flint is a generic term used to include such closely allied varieties of cyptocrystalline quartz, chert and hornstone, jasper sialex, touchstone, chalcedony and multiple other names. Fluting channels or grooves in flint is caused by the removal of the flake as from the core or a Folsom point . Freehand, any technique in which the objective piece is held in the unsupported hand. A hinge fracture, a fracture more or less at right angles to the plane of the flakes being removed. The flake termination instead of being tapered and thin is blunt and rounded or broken off flat. The impulsive pressure - the sudden and driving force applied on a crutch for pressure chipping. Inclusion is a foreigh body, gaseous or liquid or solid, usually of a minute size enclosed in the mass of the mineral. Nodular flint is a rounded flint mass or node of irregular shape and occurring naturally. Precussion flaking is a forceable conclusion of a tool with the objective piece. or an intermediate tool which results in the detaching of flakes from the flint. The plane of clevage is the structure possessed by a rock by virtue of which it breaks more readily and more persistently in one plane or in certain planes than the other . Pressure flaking is the application of force by pressure with a tool placed on an objective piece for the purpose of removing a flake

Retouching is the work of shaping the tool for sharpness or reworking in order to improve the edge of the objective piece, and straighten the edges by pressure, usually done after precussion flaking .

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Cerretating is the notching of the edge of an objective piece by the application of pressure, resulting in a sawtooth effect

Spauls a portion of flint somewhat larger and thicker than a flake and removed from a core by precussion

Striking platforms is the table or the flat surface, either natural or prepared on which the work is applied. The working edge is the thin edge of a spaul or flake which may be worked by precussion or pressure.

I would like to go into the prismatic flaking that the Aztecs and the Mayans and the Toltecs did in Central America and in Southern Mexico. They have found numerous cores and flakes that have been done by a certain method that is not known by anyone today. No one has been able to duplicate this method by either pressure or precussion. These tribes were able to detach from the core a long thin prism or a flake, the resulting flake had tapered edges with a flat top, not a triangle shape of the xxxx crosssection but this piece was removed in one blow with no ripples such as the regular coincoidal fracture. This was razor-edged and it was carried from the point of applied pressure at the top of the piece of stone, and in most cases the working stone was obsidian. This was removed the full length of the stone, or the PREPARED core, and sometimes flakes as much as from 8 to 11 inches long were removed and were 1¼ inches across . Now the amount of pressure that it took to remove a piece of stone such as that would be in the thousands of pounds of pressure. Now when this pressure is applied at the top, ~~or precussion~~ OR PERCUSSION, whichever it may be, the angle that the pressure is applied at the top must be within a degree

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of being correct, otherwise the flake will hinge back into the core or it will go out as a short concoidal fracture. Now to support the weight or the pressure at such a small point at the top of this core to keep it from crushing is anotherone of the mysteries as to how the Aztec,Toltecs were able to accomplish this particular phase of flintworking. The flakes removed from these cores were used for performing surgery and for inserting in wooden swords. They would grove the words out, break these long flakes off into uniform sections and place those in the groove with pitch and cement and with these swords history tells us that the Indians were able to leave a head standing in midair because they were as sharp as a razor and with the weight of the wooden sword they had a very formidable weapon. Another use of this type of a blade was for doing the trefining which the modern surgeon feels is a very difficult operation. They were able to cut circular holes in the skull an inch and a half in diameter and remove the bone and the indicidual would heal up and survive the operation. And they know that this is true because skulls have been found have shown as many as seven operations each one in different stages of healing, some the bone had healed over entirely from the original operation. They don't know exactly why this was performed other than originally, perhaps, an individual was hit on the head with a club and the hit caused pressure on the brain and and when the particles of bones were removed he regained consciousness and was normal again. Other times it could have been from a tumor on the brain and when the pressure was released the person was normal again. When you have as many as seven operations, one after the other at different

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times, apparently the person was neveral normal. Regardless of what they were used for, and their many uses of cutting implements, whether for cutting fabrics, leather or any uses, it was a very important phase of their welfare. The sharpness and durability of these tools indicates the high state of culture of these people. There have been many thous ands of cores made at the sites where the obs idian was found and apparently by some simple manner. Now how these cores were held and supported while this weight and pressures were applied is another mystery that we do not understand and which I am going to try and interpret and discover in what particular manner this particular phase of working obsidian was done. It can be proven why it cannot be done much easier than why it can be done and because of this my interest has developed as to what they were able to do for a utilitarian purpose that some of use should at least be able to copy it. The materials that are worked, such as obsidian and flint, are of a brittle glass-like nature, and there is a certain amount of flexibility in them. From a sharp blow they will shatter and break to pieces. Yet with the proper guidance and the proper techniques they were able to remove these long slender flakes. Not just one, but they would go around and around the core and throw away their discard when it became too small. This core resembles a facet cut bead. The flakes were started at the top and when one was removed they would move over whatever width of flake they wanted and detach another one and they would go clear around the core. This leaves a beautiful specimen of this shiny sometimes iridis cent obsidian. These cores are much prized now and it is almost impossible to obtain one any more. In the past years I guess there were many of them but

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they have been ground up and used for stone settings and for various objects for the modern people in the way of jewelry. Their shape was good for the stone cutters that would make these little obsidian heads and art objects for jewelry of which we see a good deal in Mexico. Unless they are excevated, it is almost impossible to get one now . I did a great deal of searching of shops in Mexico and around the pyramids and the natives did not even know what I was referring to when I asked for a Mayan Core I finally went to the Museum at the Pyramids and found that the Mexican people referred to these as neuceli or neucelosis. When I then visited a shop close to the pyramids and asked for them in the proper name an elderly Mexican man understood what I wanted and from beneath his counter he brought out a dust covered box containing jade beads, pieces of potter and little figurines and finally to my great happiness he found 16 of my much wanted prized obsidian cores. All of the objects looked like they had been recovered perhaps from some archaeological excevation. I now have these 16 cores for s tudy and I am going to try to work out all of the termenology of these cores and see if I can make a replica of this type of flaking. It has not been done to date by white man but this is one of the phases and the only phase of flintworking that I have not been able to accomplish. For all of this nomenclature that I have been giving thos will be the terms that I will use in as we progress with this particular phase of working obsidian. The first thing I am going to do is use the diamond saw to make uniform blocks of stone so that they will be exactly the same shape When an error is made, I will continue on and make the same error twice or three times to see if the same pressures, the same platform was used and to see if the stone was the same and there were not any inclusions in the stone or some fracture that I was not able

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to see. From looking at these cores with a magnifying glass I ~~f~~ would find ~~wh~~ at the top where the pressure was applied some apparent grinding effect. They would flatten the top of the core and they would abraide it, apparently with some corse sand or some other abrasive. Maybe it was natural emory . This would have the effect of scoring it on the surface such as we do when we take a glass cutter and score a piece of glass before we break it. It forms a medium in which the glass will part or the flint like material. So when a pressure is applied it has a certain guiding line that will cause the stone to pull down rather than having a polished effect on the top like say the edge of our tumblers or our drinking glasses have been fire polished and it gives the edge a lot more strength where it is a smooth polished surface. Now when this is abraided and scratched all over the surface it will probably break down a little easier without a great amount of pressure like it would take if it had been left in its original condition. Again we can go into the methods of levers and pressures and how these stones were held and that I am going to try to classify and carry on a little further.

I find that by striking a random blow on a piece of flint, a good example would be as, ~~such as~~ boys playing marbels, they, after some constant use start getting moons in them as they are ~~called~~ or small fractures, if one examines them closely they are little cones the sides spreading out from the point of impact at a forty five degree angle. Other examples such as a stone striking a wind shield . shooting a window or a milk bottle with an air rifle. The fracture Result as a cone

This method has been used by the Egyptians to perforate a slab of flint or jasper to make bracelets. the cone removed in this case and above examples constitutes a complete flake. The spalls from a core therefore are a portion of a cone the bulb of precussion is a part of the arc of the cone. Since the pressure spreads at a 45% angel and we get the comomly known concoidial fracture of shell like effect, spreading from the point of impact, outwardly the pressure spreads at a 45% angel and if the pressure is great enough and depending on the angle the blow is struck on the edge of a piece of flint the flake will be as long as the flint is thick and ~~twice~~ the thickness will be the width of the flake, if pressure is not sufficient It will come to the surface or hinge off short or crush the cone with no apparent ~~##~~ result at all. for each and every time a blow is struck one mus must keep in mind and do numerus mental calculations as follows.

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Materialof proper homogeneous cryptocrystaline structure
Material with no cleavage
material with no pent up stresses or strains.
Material with no cracks or fissures
Precussion tool of proper material
precussion tool of proper weight.
Precussion tool of proper shape .
Precussion tool of proper surface.
Blow of precussion tool of right amt. of force.
Blow of precussion tool of right amt. of follow through.
Blow of precussion tool of right amt. of downward force.
Blow of precussion tool of right amt. of outward force.
Material must have proper platform
Point of impact in relation with the thickness of flake
The outside surface of the flake.
The proper support of the nodule or core.
The proper angle the blow is struck.
The proper angle the blow is nodule or core is held.
The proper clearance of the platform.

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If all the above mintioned itms are correct to ror mental calculations the flake should be detached as desired but no two are removed exactly the same way. As flint does not come in perfect cubes, spheres ect. there is no definite size or shape, it varies with the piece to be removed.

The flake to be desired is made by the proper mental calculations as the proper size, thickness, length and breadth the thickness is controled by the position or place the blow is struck from the outside edge allowing sufficient strength to give the proper length. and stand the proper blow.