

# THE GOLD NUGGET

Aug 2019

## Obituary

### Timothy Fleming



We are saddened to report the death of Tim Fleming, husband of Tina Fleming, the current president of the Foothills Prospectors. Tim and Tina started their prospecting careers with the Gold Prospectors of the Rockies. Tim had been in failing health for several years. He had a love for prospecting but cancer can change everything for a person and Tim found that his strength and abilities no longer allowed him to participate the way he wanted. He especially loved the outings up at the O'Neal Property on Lake Creek below Leadville. He had been working, as his health permitted, at the Georgetown Loop Railroad. He and his wife Tina have been living in Georgetown at the time of his passing. Tim is pictured here with Dominic Ricci of the Gold Prospector Association of America (GPAA) at the 2015 GPAA Gold Show in Denver. Our condolences go out to his family. We will miss our friend. Rest in Peace



## **The Prez Sez by Jim Long**



I can't remember in quite a while, ever having the water in the local creeks and rivers around the state running so high for so late in the season. While the runoff has not been devastating, it has been relatively high and somewhat fierce. I noted the other day that we have had 19 deaths this year in the high waters. That is sort of a sobering number to think about. I am pretty sure that none of them has been prospectors this year, so far, and I hope it stays that way.

The Forums seem to be rocking lately with complaints of a number of alleged 'scam' artists out there selling gold mining claims to the unsuspecting. It is the ultimate form of 'mining the miners' and is pretty despicable. I won't go into all the sordid details of whom and what in this column, as I do not know but only one of these individuals who are currently active in Colorado right now. And as far as the

one goes that I do know, I would be happy in private to tell anyone of his evil and wicked ways. But I can tell you this. Here is an insurgence in the numbers of people who believe that the best way to prospect is to have your own claim so that you can work it and keep all the gold you find. Of course, this is premised on the idea that the claim you buy will be loaded with gold. So, let's talk a little about this.

As you all know, member Kevin Single wrote the book on 'Finding Gold in Colorado'. And in that book, he did a marvelous job of identifying some 180 plus locations of public access where you can find gold. Some are better than others but they all have gold. And that gives you a good starting point. But the majority of those locations are such that you will primarily find smaller placer gold. The likely hood of you mining ounces is about zero. It is placer gold and this is 2019. If there were a place you could find ounces of gold in a week, you wouldn't find it in a public location. I promise you that that is a fact. It is going to be already under claim, highly likely to be currently mined by the owners who know what is there and are making a living off of mining it and don't want to share it with you. It may or may not be patented. But there are a few places left that are claimable and do have small gold values on them, and I do stress the term 'small' gold values. So, you are going to have to do a bunch of research on top of everything else. Was there gold there before, has it ever been claimed before, is it even claimable now? You have to take the time to do the diligent work to find out the answers to all these questions. Then go to the site. You need to sample the property. Not in just one spot, but in multiple places all over the claimable property. What do the gold values amount to? Is it an area that you would be interested in? There are many things you need the answer to before you spend any money on it. What if it is a piece of property that is being offered for sale? Ok, let's talk about that for a little bit.

What do you know of the seller? Does he/she have a reputation in the 'gold' community. Does the property check out in all the categories I mention above? Will the seller let you sample, to your satisfaction, the entire parameter of the offered property or just let you sample in one or two spots or not at all? While many areas of the state may have a trace of gold here and there, there are only certain areas that have significant values worth looking at and a lot of areas that have insignificant amounts. It is up to you to do the research, educate yourself, and act accordingly. After all, it is your money and if you choose to waste it or throw it away because you were offered something that looked too good to be true, then I



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guess that is your business. But if you get taken, you only have yourself to blame. It is not only me telling you this stuff, but there are lots of us who have been down the trail a little bit who have been telling folks this same stuff for a long time, yet I hear of somebody being taking 2 or 3 times a month. It is like we are just blowing smoke and nobody pays any attention to us. Some guy offers a piece of property, posts pictures of some nice gold, offers to cut the price a couple of thousand dollars because he likes and trusts you and wants the property to go to a good and worthy person like yourself. You're invited to look the place over and takes a pan and tests a spot of two for you that show pretty good gold, and you figure it is just too good to be true and this is absolutely your lucky day, so you jump all over it. And the nightmare starts. You wait for the paperwork that may or may not show up, you file your fees and the government offices you are dealing with take forever to send you any paperwork or permits and the guy who sold you the place is now super hard to get a hold of and when you go back, you can't find any more gold in any other places that you test and the spots that he tested in front of you no longer have any gold in them. Get the picture?? And that is how it goes.

So, dang it, do your homework. Be suspicious. Check everything and recheck it. Leave no stones unturned in your efforts to cover all the bases and check all the boxes. But, it is your money to invest, isn't it?? If you lose it, I won't bother telling you 'I told you so', because I already have!!

Anyway, that is the view from here and I wish you all Good Luck in your endeavors, no matter what they may be! And until we meet again, keep your sunny sides up and may the bottoms of your pans turn bright with that treasured 'Yaller Gold'! You may contact me at 303-452-6087 or at [jnslong945@msn.com](mailto:jnslong945@msn.com). Happy and safe prospecting to all!!!

## The V.P. Corner by "Joe Fortunato"



Hello again, fellow prospectors. I am sitting at my desk, here at the shop, and the calendar on the wall is telling me that it's time for another V.P. Corner Article. I had to double check the calendar because the last time I took a quick glance at it, to check the date for our July meeting, I looked at the wrong month!! So now, you all know why I missed the July meeting. I am still feeling like a real dummy over that little 'brain fade'. That was the first time in sixteen years with the club, so I probably shouldn't be so hard on myself. By the time folks are reading this article, our August 3 Gold Panning Class will

have come and gone. As of now though, it is still two days away (August 3rd). I was curious about the water flow in Clear Creek, as it can definitely have an effect on our ability to set up a sluice box for the panning class. Yesterday, I took a short drive from my shop (about 12 minutes) to 70th and Washington. I wanted to see what the water situation was, and it looked good to me. I noticed that the parking area at the meat market is completely empty and the gate is closed. I have no idea what is going on with that. I know it was being rented out as storage for the last few years. If any of our members know anything about the status of things down there, let us know at the August meeting. I am looking forward to our panning class, I haven't been to the creek in about seven weeks, and I need to stand next to some moving water. On another note, I am hoping to make it up into the high country a couple of times in August. I want to go back to the spot where I found a nice bit of gold last year, while getting acquainted with my newest metal detector. I had just about given up on that location, but that trip last year got me fired up about that spot again. I called the friend that was with me on that trip last year, and he is more than ready for another go at that spot. I would also like to take a trip back to Cache Creek. I haven't been there in a couple of years, and I always manage to find some gold while enjoying the scenery in the vicinity. I look at Cache Creek much the same way as I do Clear Creek. That is, if you put forth a little effort, you can always find some gold on any given day there. Well, I guess that is about it for this month. I hope to see a few familiar faces at the Panning Class in a couple of days. Until next time **MAY ALL YOUR ADVENTURES BE GOLDEN!!!!!!** Questions or comments Call or text me 303-263-7204 Joe Fortunato

## From the Treasurer/Secretary Ledger by Joe Kafka



The August Meeting will feature a nine (9)-nugget giveaway of which the largest nugget will be 2.6 grams. The Club remains in the black and members may request to see the financial report at any time, which I have at my desk in the back. Hope to see you all there at the meeting!!



## Board Meeting Minutes From July 2019

X	James Long		Joe Shubert		Joe Fortunato	X	John Johnson
X	Mike Stevens		Joe Johnston	X	Chris Kafka		Brandon Luchtenburg
X	Joe Kafka	X	Bobby Manning	X	Andy Doll		Gary Hawley

**Quorum Present:** Yes

**Call to Order by:** Pres Long at 6:02 pm.

**Reading and Approval of Minutes:** Corrections: none Approved as read/corrected: yes.

**Treasurer's Report:** Questions: none Approved: yes.

**Correspondence:** 1 phone calls, 10 e-mails, 2 mailings.

**Webmaster:** Total Hits 154616 Hits for last 2 month 175.

**Committee Reports:** Pres. Long handed out 2019 Director's Book updates. Pres. Long also purchased the 2020 gold for the drawings.

**Unfinished Business:** Pres. Long reported that we haven't heard on the status of the Clear Creek Canyon Cleanup Project but he will check with JeffCo Open Spaces folks and find out.

**New Business:** None at this time.

**Planned Outings for 2019:** Outing Schedule completed and issued in Feb. Newsletter.

- July 27 Sat Prospecting Outing #4 Blackhawk, 9am
- Aug. 3 Sat Beginner's Panning/slucing Class, 42<sup>nd</sup> and Youngfield, 9am
- Aug 17 Sat Prospecting Outing #5 Blackhawk, 9am
- Aug. 24 Sat Club Annual Picnic Morse Park, 12 noon.

### From the Board:

- Pres. Long discussed the prospecting outing of June 29 in Blackhawk which went very well. We had 18 members who showed up and everybody did pretty good.
- BMs J. Johnston, Joe Shubert and B. Luchtenburg all out due to medical issues.
- The Cache was found by BM J. Johnston and we will take care of that tonight.
- There was nothing further added by the rest of the Board.

**Additional Announcements:** Next Board Meeting: Aug. 21, 2019 at 6:00 pm. Next General Meeting: Aug. 21, 2019 at 7:00 pm.

**Tonight's general meeting program:** We will be having a video presentation on Geology of Gold Bearing Rocks in Arizona by Jeff Davis.

**Adjournment:** Meeting stands adjourned at 6:41 pm.

### QUESTION OF THE MONTH

The Greeks thought that gold was.....?

#### 2019 GPR Board of Directors Members

**President**

James 'JJ' Long

**Vice President**

Joe Fortunato

**Secretary/Treasurer**

Joe Kafka

**2 Year Board Members**

Joe Johnston (2017)

Joe Shubert (2018)

**1 Year Board Members**

Andy Doll

Brandon Luchtenburg

John Johnson II

Bobby Manning

Chris Kafka

Mike Stevens

**Past President**

Gary Hawley

## General Meeting Minutes From July 2019

1. Meeting was **opened at 7:03 pm** by **Pres. Long** with the Pledge of Allegiance.
2. **Pres. Long** then announced that the evening Program would feature a video presentation on Geology of Gold Bearing Rocks of Arizona by Jeff Davis.
3. **Pres. Long** then gave the Metals Report: Gold 1426.20, Silver 15.94, Platinum 843.00, Palladium 1516.00, Rhodium 3295.00.
4. **Web hits** for last month was 175.
5. **Treasurer Joe Kafka** reports that the Club remains in the black. Report is available for review for anyone who wishes to see it. We have a new 'Special Nugget' so be sure to buy lots of tickets. It is a beautiful specimen from Australia. Also, don't forget to buy tickets for tonight's 9 nuggets drawing, the largest being 2.4 grams.
6. **Dan McConnell** reported from the Membership Table that we had 72 members in attendance. There were 6 guests present. The total meeting attendance was 78.
7. **Pres. Long** read the 'Question of the Month', which was **"What coin sold for \$7.6 million dollars in 2002???"** The winners will receive an extra ticket to the gold nugget drawings later.



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8. **Pres. Long** advised that there was time to enter items at the break for the '**Finds of the Month**' table and that the monthly winners from tonight will need to be saved for the Finds of the Year competition in November, 2019. A reminder to all that gold submissions need to be weighed dry and only one submission per person per category. Be sure to fill out the entry cards completely. Only finds found within the last 30 days may be submitted.
9. **Gordon Smith** announced that the '**Cache**' had been found by **John Johnson**. John received a nice 8.3-gram gold nugget for his efforts. He also announced that the new '**Cache**' had been hidden and presented **Clue #1**. Good luck to all who search for it.
10. **Pres. Long** advised that the Club Store had numerous items for sale. Be sure to drop by at the break and support your Club by buying something. We always have a supply of gold bags for sale as well. They are one of the best in town!
11. **Pres. Long** informed the membership that the next Outings are as follow: July 27 Sat **Prospecting Outing #4**. Blackhawk, 9am; August 3, **Beginners Panning/sluicing Class**, Arapaho Bar, 9am. Aug. 17 Sat **Prospecting Outing #5** Blackhawk, 9am; Aug. 24 **Annual Club Picnic** Morse Park, 1200 noon. Pres. Long also discussed our last Prospecting Outing in Blackhawk. The turnout was good and another small nugget was found along with a few pickers. Pres. Long reminded everyone to check pamphlets at the front desk during the break and to vote for the finds of the month, return any items checked out from the Club Library. There was nothing additional of note added from the Floor.
12. **Pres. Long** announced the break at 8:21 pm. Meeting was called back to order at 8:36 pm.
13. **Pres. Long** announced the winners of the '**Question of the Month**'. The answer was, "...?A 1933 double eagle gold coin !! There were 33 winners who received their extra drawing ticket for the gold drawing.
14. **Pres. Long** announced the winners for the '**Finds of the Month**'. Those were:
  - **Best Coin** – There was no entry in this category this month.
  - **Best Jewelry** – **Kathy Lemuel** with an earring she found on the ski slopes at Breckinridge, Colorado.
  - **Best Mineral** – **Bobby Manning** with some Epidote crystals he found at the Calumet Mine near Salida, Colorado.
  - **Best Artifact** – **Roger Schlenger** with an old spike he found in Lakewood, Colorado.
  - **Best Bottle** – **Robert Mahoney** with an old medicine bottle he found in Colorado.
  - **Most Raw Gold** – **Bobby Manning** with .24 grams of gold he found in Gilpin County, Colorado.
  - **Largest Raw Gold** – **Bobby Manning** with a 0.95-gram nugget he found in Colorado while prospecting.

\*\*\*\*\*Winners will now need to save their items for the Find of the Year to be held in November 2019.\*\*\*\*\*

15. **Pres. Long** concluded the evening with drawings for the numerous door prizes donated by the **GPR, Jerry Marz and Hank Innerfeld and Pres. Long**, followed by drawings for the 18 door prizes and 9 gold nuggets. Pres. Long also wants to remind that holders of drawing tickets for the regular gold drawings who did not win and want to redeem those tickets may present them at the end of the Meeting and they will be reimbursed at .01 cents on the dollar, or they shall be considered to have been donated back to the Club. Those assisting in the drawings were **Joe Kafka and Chuck Cown**.
16. **Pres. Long** reminds the members that sometimes during the meetings, The President's time is overwhelmingly taken up by the many who wish to speak to him and he apologizes if anyone ever feels like he is unavailable. It is not his intent to be inaccessible and he encourages anyone with questions to contact him by e-mail or phone outside the meetings at any time. His e-mail and phone number are on the web site.
17. **Pres. Long** thanked **Greg and Nancy Knerl** and all those who contributed to the Refreshment Table. Any member is encouraged to chip in and add to the spread each month. Don't forget the 'tip jar' also, which helps to defray costs. This really helps the folks who run the table and those who volunteer up front each month. The Club appreciates the efforts that each and every one of you to make the refreshment table enjoyable.
18. **The August Meeting Program** will be a video presentation to be determined. Until next time, remember to prospect safely, live long and be grateful for that golden bounty from the stars, that gleaming magical miracle, called 'gold'!
19. The Meeting was adjourned at 9:02 pm.





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### **A Miner's Laugh**

An old miner was in the local bar having a cold one after a hard day in the mine, and the bartender asked him if he wanted to check in on Facebook on the business Wi-Fi before he left for home. The old boy snorted and looked the bartender in the eye and replied, “Nope, I am trying to make friends outside of the complicated social media stuff while applying the same principles. Therefore, every day I walk down the street after work and tell everyone I see just what I have eaten, how I am feeling at the moment, what I have done the night before, and what I will do later on and with whom. I show them pictures of my family, my dog and of me mining, taking things apart out at the mine, driving back and forth to town, eating lunch and doing all the things everybody else does all day. And I listen to their conversations, give them the ‘thumbs up’ and tell them that I like them. And it works just like Facebook!! Why, I have four different people following me right now. Two are police officers, one is a private investigator and one is a psychiatrist!!!”



*(Taken from the internet and revised just for all us ‘old miners’)*

### **The finds of the Month July 2019:**

**Best Coin** – There was no entry in this category this month.

**Best Jewelry** – **Kathy Lemuel** with an earring she found on the ski slopes of Breckenridge, Colorado..

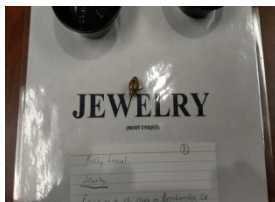
**Best Mineral** – **Bobby Manning** with some epidote crystals from the Calumet Mine near Salida, Colorado.

**Best Artifact** – **Roger Schlenger** with an old spike he found in Lakewood, Colorado.

**Best Bottle** – **Robert Mahoney** with an old medicine bottle that he found here in Colorado.

**Most Raw Gold** – Failed to get photo of the ‘most gold’ of Bobby Manning

**Largest Raw Gold** – **Bobby Manning** with a .95-gram nugget he found in Colorado.



Be sure and bring your treasures and finds in to share with the rest of the membership each month. We would like to know what everyone else is finding so don't be bashful. Winners each month will have their names published in the Newsletter. There are seven (7) categories to choose from when entering. Winners of the monthly judging will need to save and return with their winning find next November 2019, when the Finds of the Year will be judged. **DON'T FORGET SAVE THEM!!!!**

### **2019 Prospecting Outing #4**

Club members gathered again on July 27 for our monthly sojourn up on the mountain in Lake Gulch near Blackhawk. The weather was once again excellent and all the diggers had a good time. I believe that everyone did find a little gold at the least so the outing was pretty much a success. We did catch a little late afternoon rain down in the lower Canyon where we ran everyone's material through the high bankers. Pres. Long took a few photos of all the fun





## **Indian Scientists Develop 'Black Gold' - A Wonder Material**

Indian citizens are fascinated with gold, making India one of the largest consumers of the yellow metal globally. Now Indian scientists have tinkered with the chemistry of the material and turned it into 'black gold' which they say can be potentially used for applications ranging from solar energy harvesting to desalinating seawater.

Scientists at the Mumbai-based Tata Institute of Fundamental Research (TIFR) used gold nanoparticles and by rearranging size and gaps between them developed a new material which has unique properties such as capacity to absorb light and carbon dioxide. Gold does not have these properties, therefore 'black gold' is being called a new material. In appearance it is black, hence the name 'black gold.'

The findings have been announced in Chemical published by the Royal Society of Chemistry.



Science, a scientific journal

"We have not doped gold nanoparticles with any other material or added other materials. We varied inter-particle distance between gold nanoparticles using a cycle-by-cycle growth approach by optimizing the nucleation-growth step, using dendritic fibrous nanosilica, whose fibers were used as the deposition site for gold nanoparticles," explained Vivek Polshettiwar, who led the research team, while speaking to India Science Wire.

## **A Poem by Lucas Wentzel**

I dig,  
    you dig,  
        we dig,  
            he dig,  
                she dig,  
                    they dig

**It is not a beautiful poem,  
But it is very deep!!**

## **Mining Company Rejects EPA Order**

In Durango, Colorado, the Sunnyside Mining Corp. says that it won't carry out cleanup work ordered by the US Environmental Protection Agency as part of a superfund project in Southwest Colorado. Sunnyside sent the EPA a letter informing the EPA that Sunnyside is not responsible for the pollution flowing from inactive mines in the area. The EPA wants Sunnyside to help pay for some of the initial investigations into the Bonita Peak Superfund cleanup, citing the company's previous mining activities there. The Project includes the Gold King Mine, the source of a 2015 spill that polluted waters in the Colorado, New Mexico and Utah regions. An EPA contractor triggered the spill while conducting excavation at the mine site.

## **Abandoned Mine being Turned into a Clean Power Producer**

To most People, a disused open-pit goldmine is simply a hole in the ground, but in Australia's remote north, an old gold mine is being turned into an electricity-generating power plant. What is happening in the deep hole dug more than a century ago by gold miners is a world first that could be replicated in other locations in the hunt for sources of clean energy. The power from the old Kidston Mine located inland from the Queensland coastal city of Townsville, will come in the form of 'pumped' hydro-electricity with water from a high dam passing through turbines as it drops into the old gold mine before being pumped back up and recycled. Pumped hydro-electricity is not new but the Kidston project of Genes Power is a first in the way it is turning an old mine into a clean energy power source. Genes Power is also



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installing a large solar power farm that will form part of what it calls the Kidston Renewable Energy Hub which will deliver electricity into the Queensland power grid. Government backing for the Kidston pumped hydro and solar farm includes an agreement from a regional development agency to provide \$450 million in debt at a concessional interest rate. The starting point for the Kidston pumped power project is a conventional dam built to supply water to the mine when it was operating. That water will be released and drop through turbines into the old gold pit which itself has become a deep lake. Some of the power needed to move water back to the upper reservoir will come from the solar farm outside periods of peak electricity demands when the project will be capable of delivering 2000 megawatts of electricity per hour for eight hours. Australia's abundance of sun and abandoned open-pit mines means there is the potential for more projects which convert old holes in the ground into clean power sources.

## Hidden 'Cache' was Found July 2019

The Club 'Cache' was found in late June after 6 months of looking. The Smith Family, Gordon, Yvonne and Kale, had found the last one and as the finder, it became their job to hide the next one and to develop the clues for the next search. The only rules are that the cache must be hidden within 30 miles of the Colorado State Capitol building. After delivering the clues, which are only available by attending the Club meetings, John Johnson found the hidden target by following the clues. Gordon explained each of the clues and how they applied to the area and the historical significance of each one. It should be noted that if you choose to search for the new cache which has been hidden by John, you will need to be pretty sharp. This is at least the third cache that John has found and he is quite crafty at hiding them as well. For his efforts, John received a beautiful 8-gram nugget of gold in quartz matrix. Well done John. Now it is up to the rest of you to get out there and find the next one. When you do, your reward will also be quite 'golden!!!' (Photo of John, Pres. Long, and Gordon Smith presenting John with his nugget.)



## Sluice Box Building – Riffle Design

Taken from "How To Build and Operate Sluice Boxes" By Gary Weishaupt

What we prospectors call 'riffles' are things that were invented long ago by good old Mother Nature when she decided to make river and creek beds all rough and broken up thereby creating inconsistencies that broke up the smooth laminar flow of water so that suspended solid materials became stratified and tended to settle, according to their weight, into both small and large irregularities at the bottom of these watercourses.

If you take a look at any typical stream you'll see the effects of these natural riffles all around you in the form of what we call 'bars'. You'll observe that the material is lain down in distinct layers consisting of heavy materials, lighter materials and then even lighter materials one on top of another. Bars are created where the stream has a preponderance of natural irregularities that cause the materials to drop out of the liquid suspension. In natural watercourse these irregularities can be both horizontal and vertical. Horizontal riffles are created where streams or rivers are diverted laterally at bends and twists while vertical riffles are created at changes in the elevation or slope of the watercourse. A big boulder that rolls down into a creek creates a really great natural riffle that is both vertical and horizontal.

When we build a set of riffles for a sluice box we're just trying to duplicate this natural condition of a streambed but in a much more sophisticated and controllable fashion.

The evolution of riffles with respect to sluices goes so far back into time that there are no written documents that describe when, where or how some guy first got the bright idea of putting a stick or some rocks perpendicular to a water flow to capture the heavy materials that were suspended in the laminar layers of the watercourse. It most probably came about accidentally based on the observation of naturally occurring riffles like boulders in the middle of a creek.

We do know that riffles in the early sluices we're all familiar with consisted of relatively small sections of native timber, sometimes quartered and squared but often just in the natural 'rounds' of a tree branch lodged in between the sides of the sluice flume. Almost anything that breaks up the laminar flow of water that carries suspended solid material will create irregularities that cause that suspended material to drop out of suspension. This is how a sluice functions and the process is both extremely crude and yet extremely sophisticated at the same time.





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Technically speaking, sluice boxes are 'gravity concentration' devices, as are regular old gold pans. They operate by taking advantage of the fact that gold is 19 times heavier than water and about 6 times heavier than almost all other minerals, rocks, gravels and sands.

What is surprising, considering our modern day level of technology is that even a crude wood sluice box with wooden riffles will capture just as much gold as the latest and greatest hi-tech contraptions we've come up with so far, that is, with respect to gold of a specific size, shape and weight.

This last statement is kind of a loaded one so we need to look at what is being exactly stated in more detail.

Back in the late 1800's when mining engineers began to take a serious look at sluices they discovered that one could recover what was called 'spherical' gold using almost any type of sluice riffle. The term 'spherical' here applied to any piece of gold that had any type of 'body' to it even if it was elliptical, spherical or irregular in shape just so long as it was not significantly 'flattened'.

The reader can do their own research here if they want to but most experts, even modern experts, agree that most pieces of gold that have a significant 'belly' or 'body' down to small pieces that are one sixteenth of an inch or more in any dimension can be recovered relatively easily behind almost any type of riffle design. Some experts who have made exacting studies of riffle designs have lowered this capture threshold down to pieces that are only 1 mm (.03937") in any dimension. Basically this means that almost any piece of gold having a dimensional shape that is approximately the size of a typical pinhead is recoverable in almost any type of sluice equipped with almost any type of riffles. Of course anything larger than this is almost a no-brainer with respect to capture as long as the sluice is set up properly.

The minimum sized nugget just described dimensionally is what I call a 'micro-nugget' or a 'mini-nugget' and they can be incredibly small but they are very different from we call 'flakes', 'flecks' or 'flour gold'.

These micro-nuggets can usually be picked up with a pair of tweezers fairly easily as opposed to 'flakes' even though these flakes sometimes appear to be much larger in size. The big difference is the cross-sectional dimension of the pieces. The micro-nuggets are indeed just very miniature sized 'hunks' of gold while 'flakes' are very often flattened to the point of being as thin as gold leaf. There is a huge difference in how these two different types of gold behave in a sluice box. Of course there are also thousands of pieces of this small gold that are in various states between being round, elliptical or flat so there are transitional states of behavior as well.

Flat pieces of gold, even those looking very large when viewed from above, have hydrodynamic properties and can behave much like an aerodynamic airplane wing. As water flows past a flattened gold flake the flow over the top portion is faster than the flow moving past the bottom surface and this velocity difference creates a low pressure area at the upper surface so that it can literally 'fly' or 'plane' in the water if the velocity is high enough. This phenomenon is called 'saltation' and is the primary reason it is so difficult to concentrate very fine flake type gold. In very high water velocities even relatively large flattened micro-nuggets are subject to saltation. Since gold is so dense particles larger than about 1/16 of an inch (mini-nuggets) in thickness will be rolled or tumbled instead of lifted.

One of the characteristics of saltated particle flow is that the trajectory of the particle is parabolic and of relatively short length, especially for heavy minerals so the small pieces of gold that are lifted move through the flume in small arching 'leaps' instead of being carried away in long arcs in the laminar flow. This is why the use of a capture fabric like Nomad carpet (miner's moss) is so effective since the particle on the downward portion of the trajectory has a tendency to bury itself in the fibers.

The objective of 'modern' sluice boxes and riffle designs is to maximize the recovery of these very small pieces of gold, spherical, flat and anything in between and to collect the larger pieces as well.

There is a current myth that the so-called 'Hungarian' riffle design is a state of the art piece of technical engineering but in fact there has been very little actual testing and comparison of various riffles under scientific conditions and little data has actually been published. There is no doubt however that the so-called Hungarian design performs well but not necessarily any better than other alternative designs when one considers other factors that affect the overall performance of a sluice box.






 Wild West Traders LLC
 

## COINS GOLD SILVER

Buy - Sell Collections - Scrap  
 Historic, Rare, and Unusual Coins  
 Downtown Golden by the Welcome Arch  
 1111 Washington Ave Ste #105 303-279-1844


**A Touch of Class In Stained Glass Studios**  
 New Projects · Restoration  
 Residential · Architectural · Liturgical



Copper foil · Zinc & Lead (free) came  
 Kiln-fired glass painting/staining/enameling


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**Jesse Peterson**  
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For information to publish your "Ad" in The Gold Nugget, please contact the Editor. **COPY DEADLINE** is due to the editor by the 25th of the month for publication in the following months' issue of the Newsletter.

**Contact the GPR President**

*(Layout Design Subject To Additional Cost)*



**Coming Announcements and Special Events for Sept 2019**

(**WMMI** - Western Museum of Mining & Industry, 225 North Gate Blvd. Colorado Springs, CO 80921  
(<https://www.wmmi.org/>) (Free to GPR Member with badge)

SUN	MON	TUE	WED	THU	FRI	SAT
1	2 <b>Labor Day</b>	3	4	5 <b>WMMI Lecture: Cripple Creek</b>	6-7 <b>GPR</b> Highlands Ranch Panning Demo (5,6,7)	
8 <b>National Grandparents Day</b>	9	10	11 <b>Patriot Day</b>	12	13	14
15	16	17	18 <b>GPR Club Meeting</b>	19	20	21 <b>GPR</b> Outing Lake Gulch # 6
22	23	24	25	26	27	28 <b>GPR</b> Jeffco ClearCreek Clean-up
29	30 <b>Rosh Hashana</b>					