

Portland Gold Prospectors, Inc

GPAA Portland Oregon Chapter





Come Join Us at Our Next Meeting.

June 19th at 1:30pm. Milwaukie Grange hall 12015 SE 22nd, Milwaukie, OR 97222

The Portland Gold Prospectors meetings are the third Sunday of every month beginning at 1:30pm. All interested parties are invited to attend the monthly meetings. Become a member of the Portland Gold prospectors, Inc a chapter of the Gold Prospectors of America. For information contact Jerry Johns, jerryjjohns@gmail.com or visit

www.portlandgoldprospectors.org.

President's Blog June 2016

Summer is here fin the Pacific NW and I am hoping you are all taking advantage of the outdoors and getting some mining in. We had our first outing in May and it was great. It was at Cape Disappointment -beach mining - and we have Rodney Chavez to thank for it. He organized and ran this outing and it was GREAT! We also opened up the chapter claim near Baker City for the summer. Remember, if you intend to go over there, you **must** check in with Dave C. before going. We will be enjoying the chapter claim June through September. We also have an outing scheduled for the North Fork of the Santiam River on July 19th and the first two weeks of August is dredging season. Please remember to be safe and we will see you in the upcoming meetings.

Thanks and see you soon, Jerry Johns President - Portland Gold Prospectors Inc.



Steve Lewin announced a GPAA membership drive that will take place soon. The winners will be treated to a mining experience at the Copper Creek claim in WA State (about 40-50 miles from the Portland area).

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Portland Gold Prospectors, Inc. May Minutes

Secretary's Report May 15, 2016 Milwaukie Grange Hall, 12015 SE 22nd Milwaukie, OR Meeting called to order by President Jerry Johns at 1:31 pm

Pledge of Allegiance conducted.

Attendance:

56 attendees at the meeting, 6 visiting guests were present.

Meeting minutes:

A **Motion** was made and seconded to accept the Secretary's report as written and published in the May newsletter. The motion was approved by the members present.

Treasury report: Beverly Parker

The Treasury report was read by the Treasurer to the association. In addition to regular funds, the association received a check today from the SW Washington Prospectors as our share of the major raffle from the Portland Gold & Treasure Show. Also, Jerry Johns and the Board previously applied to the Intel Corporation for a Volunteer Grant on behalf of Portland Gold Prospectors. The Grant Program funding was approved by Intel and their donation was received by the Treasurer.

A **Motion** was made, seconded, and approved to accept the Treasurer's report as written.

Correspondence:

The Eastern Oregon Mining Association newsletter for May 2016 was available for review. See the link in our newsletter for EOMA to obtain more information.

Membership:

Jerry Johns explained the details to become a member of Portland Gold Prospectors, a non-profit organization. Membership with GPAA is not required to participate with the Chapter; however, it is encouraged. One needs to attend 3 meetings or association events (at least 1 regular meeting) for full membership. Be sure to sign in at each meeting to record your attendance. Membership cards were given to new members who attended 3 or more times. Since there are no dues, the Chapter gains funds from monthly raffles and the silent auction at the meetings. The Chapter will now have GPAA member kits available for purchase at our meetings for \$84.50 that includes a gold pan and Mining Guide of USA claims. Renewal of existing memberships can also be purchased at meetings. See Jerry Johns or Steve Lewin if you wish to become a GPAA member.

GPAA State Director:

Steve Lewin announced a GPAA membership drive that will take place soon. The winners will be treated to a mining experience at the Copper Creek claim in WA State (about 40-50 miles from the Portland area). Dredging is allowed after August 1st.

Outings:

Jerry referred members to the 2016 Events Calendar with upcoming mining opportunities during the summer months. Dave Chiara spoke about work to be done at our Tyroy claim. The first trip will be for preparation only and no mining is planned. No camping will take place on the claim site. Expected dates for the next mining event were discussed. Vehicles with 4 wheel drive are recommended. Also, members were reminded to contact Dave Chiara or Jerry Johns before you plan to visit the claim and what equipment you will use. Dave said the water level in the ponds may have receded, so normal water level is expected this summer. Members were reminded to bring their own drinking and washing water since no fresh water is on site.

Jerry Johns discussed equipment and porta-potty costs that were rented last year in eastern Oregon. Members should plan to bring some type of toilet arrangement when camping. He said the association will need to spend funds again this year for equipment. After discussion, Bob Burns made a **Motion** to approve \$2,000 from the Claim Fund for operations this season. The **Motion** was seconded and passed.

Dave Chiara also said he and Steve Lewin are researching two additional claims in SW Washington that have water available for mining. More information will be reported later.

Bob Burns reviewed his experience at Cape Disappointment with Rodney Chavez this weekend. The group did a beach clean up and learned where to go and how to process flour gold on the beach.

Safety:

Mike Lewis, as the new Safety Person, gave suggestions to handle heat exhaustion or heat stroke when the weather heats up. For severe problems he said call 911 right away, as this can be life threatening. He reminded us to take lots of drinking water when mining. Mike also gave ideas to avoid ticks and products to remove them.

Newsletter:

Jerry thanked Larry Hellie who has been the PGPI Newsletter Editor for the past 5 months. The newsletter has several interesting and informative articles. Larry Hellie said he will review articles from members who want to describe their own mining experiences. If you want to submit an article, email it to Jerry Johns or Larry Hellie at "calllarry@comcast.net". Jerry noted our association newsletter is available to read online. For members who wish to have a copy mailed to them, there is a \$15.00 annual fee to cover the cost of printing and mailing

Library:

Ron Barnus reported on the library materials in the absence of Joe Weber. The library is free to use for members and contains outstanding books, maps, magazines, and DVD's. He said when you check out materials, be sure to return them the next month.

Old Business

Jerry stated that funds for the association come from raffles at our meetings, the quarter drop, silent auction, coffee/snack fund, and the sale of club clothing. Today we had the Silent Auction with a scuba suit, a prospector mold, and books for others to bid on.

Summer Garage Sale:

Jerry Johns reminded members about the association Garage Sale on August 26-27-28th. He asked members to look for items they can donate such as tools or household items. We may hold a second sale at another location if there are enough items to sell or left over from this date. Contact Ken Burns if you need information or plan to bring items to the June/July meetings.

Education:

The education event for the month was a display and information from Mary and Clarence Sparks, owners of Lucky Dog Metal Detecting Supply in Oregon City. They are authorized dealers for White's detectors. Mary explained that White's is a family business in Sweet Home,

Portland Gold Prospectors, Inc. May Minutes (cont.)

Oregon. Factory tours can be done on week days to learn details of detector manufacturing. The Sparks' display included items found in England and other locations dating back to the 1700's. Mary Sparks detailed suitable places to use your metal detector and appropriate practices to leave the area clean and without problem holes. She said a good place to start is your own property. Most parks and cities require that you get permission before using a metal detector. She warned that detectors are <u>not allowed</u> in any National Park. Other places with permission are State Parks, parking strips, ghost towns, beaches, private property (friends/relatives), and road or sidewalk repair sites. For assistance and more information on Metal Detecting, she suggested you attend the Oregon Treasure Trail Society (detectors) meeting in the Portland area.

<u>Code of Conduct</u>: Jerry stated we want a safe and friendly place when we gather at meetings or events. There is an official Code of Conduct printout on the table.

Bill Bench presented the instruction sheet to build a bucket style intake screen. This is the type needed when you use any motorized pump in Washington streams.

New Business

Mining Permits:

Jerry presented an updated handout titled <u>Oregon & Washington</u> required Permits for: Prospecting, Vehicle use, and Forest Service roads. The updated information was prepared by Jerry Johns as a result of changes from Senate Bill 838 that affect panning, sluicing, and other mining in Oregon and Washington. He discussed the definitions of "prospecting" or "recreational placer mining." Also he noted prospecting does not require a permit from the Dept. of State Lands.

Jerry thanked Dorothy Ruth, Elaine Ruth and other helpers in the kitchen, along with those who brought in wonderful snacks today.

Randy Harper, past president of SW Washington Gold Prospectors, stated they plan a "get the lead out" event to remove lead from a local river in the next 2 weeks.

A raffle was held with \$1.00 tickets and \$5.00 tickets. A nice gold nugget was awarded to the holder of the first \$5.00 ticket drawn.

The meeting was adjourned at 3:42 pm.

(Respectfully submitted by Melinda Dorning, Secretary)



Melinda Dorning looking over the Eastern Oregon Mining Association newsletter for May 2016.

2016 Events Calendar

<u>June 19th</u>: PGPI monthly meeting 1:30pm <u>Late June/Early July: TYROY:</u> Come to our meeting to learn exact plans and dates.

July 17th: PGPI monthly meeting 1:30pm

July 19th (Tuesday): North Fork Santiam (non-motorized) prospecting. Panning, sluicing only

July 31st: Combined meeting/BBQ with SWWGP

Aug 6th: Lewisville, WA - Dredging, high banking, sluicing and panning with SWWGP

<u>Aug 7th:</u> Daybreak, WA - Dredging, high banking, sluicing and panning with SWWGP

Aug 12th- 15th: Yellow jacket, WA Dredging, high banking, sluicing and panning with SWWGP

August 21st: PGPI monthly meeting 1:30pm

<u>Aug 26th, 27th & 28th:</u> PGPI Garage sale. (May try a 2nd location if enough items are left after initial weekend)

<u>Sept 3rd & 4th:</u> Copper Creek prospecting – dredging, high banking, panning. (One or both days)

September 18th: PGPI monthly meeting 1:30pm

<u>September 25th:</u> North Fork Santiam prospecting (Non-motorized) <u>September/October (TBD):</u> TYROY trip – Reclamation work and opportunity to bring dirt back.

<u>October (TBD):</u> Cape Disappointment – Joint outing; beach mining with SWWGP

(Led by Rodney Chavez -we will align event date to tides as we get closer)

October 23rd: PGPI monthly meeting 1:30pm November 20th: PGPI monthly meeting 1:30pm December 18th: PGPI monthly meeting 1:30pm



Mike Lewis, as the new Safety Person, gave suggestions to handle heat exhaustion or heat stroke when the weather heats up

ICMJ Prospecting and Mining Journal June 2016 (Vol. 85, No. 10)

The Heavy Minerals in Your Concentrates - Chris Ralph

When processing placer gravels, no matter what equipment you are using, you recover and concentrate the heavy portion of the gravels, hopefully including gold. But what other minerals are in those heavy concentrates? Could any of them be valuable? Lots of prospectors are curious as to what those minerals are that concentrate down in your pan with the gold. In addition to being heavy, these minerals are resistant to weathering and hard enough to survive tumbling around in a stream. The different minerals that can be found will vary quite a bit, and the exact makeup of the heavy concentrates depends on the country rocks over which the streams and rivers have flowed. Most of the heavy concentrates come from the rocks that make up those bedrock formations, but some can come from other veins and mineral deposits in the stream drainage as well.

The fact that mineral deposits can contribute specific types of heavy minerals is why the analysis of the heavy mineral concentrates in the streams of an area can be an important prospecting technique for finding undiscovered mineral deposits. We will examine how this works in further detail toward the end of this article. First, let's take a look at some of the various heavy minerals that may be found along with gold. No one place will have all of these, but they are found in some locations.

Magnetite. A very common mineral in placer concentrates, magnetite is a widespread ore of iron. It is found commonly associated with crystalline metamorphic rocks, also frequently in igneous rocks that possess a basic type of chemical makeup, such as diabase, gabbro and peridotite. It is one of the three common minerals that make up the bulk of black sands. Highly magnetic, it is easily captured out of placer concentrates, but because the value of iron ores is so low, only very rarely is it economic for a placer operator to ship this mineral as iron ore.

Hematite. Hematite is also extremely common in placer concentrates and is the most important of all the iron ores. It is widely distributed in rocks of all ages and is an accessory mineral in feldspathic igneous rocks, such as granite. It is also common in many metamorphic rocks. In red sandstones it is the cementing material that binds the quartz grains together. It is one of the three common minerals that make up the bulk of black sands, but is only weakly magnetic. With a very strong rare earth type magnet, it is possible to capture a good percentage of the hematite out of placer con-

centrates.



(Left) Hematite is a important ore of iron and is found in black forms like this, though not always in the lumpy form that this specimen shows. (Right) Garnet is a mineral that is frequently associated with heavy mineral concentrates in many areas. It can be of any color but is most commonly in shades of orange to red. Its crystal form leads it to be found in ball-type shapes like this crystal shows.

Ilmenite. Ilmenite is the third mineral that makes up the bulk of black sands, and is the least well-known of the three. It is a titanium and iron oxide mineral that is weakly magnetic with a black or steel-gray color. Ilmenite is a common accessory mineral found in many types of metamorphic and igneous rocks. Commercially, ilmenite is the most important ore of titanium metal. Most of this ore is recovered from heavy mineral sands worked for their titanium content. However, it is uncommon that enough ilmenite would be found in a placer gold deposits to make it worthwhile as a by-product. Australia is the world's largest ilmenite ore producer, and although most ilmenite is recovered from heavy mineral sands ore deposits, ilmenite can also be recovered from layered intrusive sources or "hard rock" titanium ore sources.

Garnet. Garnet is actually a family of minerals, but they are a frequent mineral in metamorphic rocks such as mica schists, metamorphosed limestones and gneiss, and also in granites and in some ore veins. Almandite is the most common of all the garnet types. While some shade of red is the most common garnet color, the various forms of garnet come in nearly every color from colorless to black. Shades of red to orange are the most common, but purples and browns are common, too. Blue is the most unusual color for garnet. Garnet is common in some placer concentrates, but sparse to non-existent in others.

In places like the beaches of Nome, Alaska, garnet is so abundant that the heavy concentrates are colored red. In other places I have processed gravels without a speck of garnet. In clear crystals of large enough size, it can be a gem, and in some placer gravels in Montana and elsewhere the garnets do occur large enough for gemstone use. In some places with abundant garnet, the material is manufactured into commercial abrasives.

Corundum. Corundum is common in some metamorphic rocks, such as crystalline limestones, mica-schists and gneiss. It is found in certain igneous rocks that are deficient in silica and rich in aluminum. Corundum has been mined in the past as emery for use as an abrasive, but the . (Continued on Page 5)

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The Heavy Minerals in Your Concentrates - Chris Ralph

majority has been replaced by synthetic materials. The most famous use is as a gemstone, as both sapphire and ruby are forms of corundum. In Montana and a few other places, gold-bearing gravels can contain gem-quality sapphires in the heavy mineral concentrates along with the gold. **Zircon.** Zircon is widely spread in tiny crystals as a primary constituent in many different rocks, both igneous and metamorphic, and in large crystals in a few. In igneous rocks it is among the first to crystallize out from a cooling magma. It is the chief ore of the rare metal zirconium, and where the crystals are large and clean, it can be used as a gemstone. Although I don't know of any locations in the US in which gem quality zircons are found with placer gold gravels, I know in Australia there are gold gravels that have gem zircons. It is commonly associated with gold placers in stream sands and is the mineral that makes up the gray/white non-magnetic fraction of many placer concentrates. Zircon is mined and concentrated from heavy mineral concentrates commercially, but only very rarely is it abundant enough in placer gravels to be worthwhile as a byproduct.

Rutile. Rutile is a titanium oxide mineral found in granite, gneiss, mica schist, metamorphic limestone and dolomite. It is sometimes found as an accessory mineral in the rock and sometimes in quartz veins traversing it. It forms dark brown, opaque, cleavable masses and sometimes brilliant black crystals. It is found in small grains as a minor element of black sands in some placer gold districts. It is not magnetic.

Monazite. Monazite is a comparatively unusual rare earth mineral that occurs in the form of small grains and crystals scattered through certain granites, granitic schists and pegmatites. In these rocks it forms as a separation on cooling from the granitic magma in grains of a yellowish to brownish color. It is found only in very small percentages in these rocks. However, because it is dense and resists weathering, when the rocks are weathered and broken down into sand the monazite is freed and concentrated along with other heavy minerals. In the Boise basin of Idaho, the heavy yellow sands found in the placer deposits there are monazite, and these heavy sands have been considered as a reserve of rare earth minerals.

Cassiterite. Cassiterite, or "tinstone," is the only important ore of tin. It is mined from both lodes and alluvial deposits. In alluvial deposits, cassiterite occurs as rounded pebbles of a dark brown color, sometimes as fibrous aggregates and more rarely as glistening black crystals. A large percentage of the world's supply of tin is obtained from placer



This pan shows the result of a run of placer gravel with gold, black sand, and a little man-made lead from buckshot and other shooting. Most of the black sand is magnetite and hematite, but there are small amounts of other minerals in here as well.

deposits, formed from the weathering of tin-bearing veins. Cassiterite only rarely occurs in placer deposits with gold; in some places in Alaska there are minor amounts of this mineral in the heavy concentrates.

Cinnabar. The only important ore of mercury, cinnabar is found in veins cutting serpentine, limestones, slates, shales and various schists. It is commonly associated with gold and various other sulfides in certain types of epithermal deposits. Although it is heavy and resists weathering, it is not terribly hard or durable, so it is only found in concentrates near to the source in the ground. I found cinnabar in concentrates I dug at Moore Creek in Alaska.

Platinum. Platinum is a rare metal that occurs as nuggets and flakes in placer deposits. It is always worth saving. Platinum is usually alloyed with several percent of metallic iron and with smaller amounts of platinum group metals such as iridium, osmium, etc. The amount of platinum in a platinum nugget is normally less than 80 percent. It occurs with gold in some placer deposits because it has been preserved on account of its great weight and resistance to weathering. Its original source of placer platinum is usually in ultrabasic rocks like peridotite or the serpentine resulting from their metamorphism. It occurs so sparsely disseminated through these rocks that it is only after their disintegration and concentration by flowing waters that the platinum is concentrated enough to be worked. Exploration for placer deposits of platinum should be in the vicinity of ultrabasic rock bodies.

Chromite. This mineral is a common constituent of ultrabasic igneous intrusive rocks like peridotite and the serpentines derived from them. The mineral is only found in these types of rocks, so its presence indicates they are nearby. One of the first minerals to separate from a cooling rock magma, it is a segregation from the molten rock. It is a less common form of black sand and is not magnetic. Chromite is the ore for the metal chromium, which is used for plating and chrome-iron steels. **Sheelite.** Scheelite is an ore of tungsten, and is found in granite pegmatites, contact metamorphic deposits, and high temperature veins. It is sometimes found with gold. It has been mined in the Western US as a contact metamorphic product in altered limestone intruded by granite, and associated with skarn deposit minerals like garnet and epidote. It is found in small amounts in the placer gravels of Nome, Alaska, and occurs in larger amounts in some of the gravels at Randsburg, California.



Platinum is a valuable mineral found in heavy concentrates along with gold. Most times, the platinum is rounded the same as gold nuggets typically are, but these small nuggets of platinum are in the form of crystals with sharp edges and corners.

Pyrite. Pyrite is a common mineral, and is found under a great variety of conditions. It is easily recognized by its bright yellow color, brilliant luster (Continued on Page 6)

ICMJ Prospecting and Mining Journal June 2016 (Vol. 85, No. 10) (continued from page 4) The Heavy Minerals in Your Concentrates - Chris Ralph

and hardness. The mineral is the product of igneous, metamorphic and geothermal processes. Pyrite occurs in quartz veins and as grains or crystals embedded in all kinds of rocks, Within rocks it usually appears as crystals, but may also appear as odd shaped masses. Pyrite is found in its bright and yellow form in placers only where the source veins are nearby as it readily weathers to limonite. This form of limonite formed from pyrite is

Common in many placer concentrates. When fresh and unweathered, yellow pyrite is some of its forms so closely resembles gold that it is known as fool's gold. For experienced prospectors, there is raely any difficulty in distinguishing between the two.

Barite. Barite is a common mineral of wide distribution and occurs as a gangue mineral in many metallic veins, closely associated with ores of presence of certain rock types. Where these are the favorable rocks for a mineral deposit, the heavy minerals can point toward the location of these deposits. The heavy mineral concentrates can be collected in the field with nothing more than a simple gold pan.

Diamond. Valuable both as a gemstone and as an abrasive, diamonds are much sought after. Diamonds are found in a rock known as kimberlite, which occurs in the form of volcanic necks or pipes. Because of their hardness and durability, diamonds are found as placer deposits in gravel. In these placers, diamonds are associated with heavy minerals like gold, platinum, topaz, garnet and tourmaline. Historically, diamond placer mines have been very productive. Hundreds of diamonds were found spread sparsely through the placer deposits of the California Mother Lode by the old time miners. In the 1980s, gold dredgers in Wyoming found some diamonds in their concentrates that led to the discovery of a number of diamond-bearing kimberlite pipes in the area. Unfortunately these pipes, while they did contain diamonds, did not contain commercial gualities. crystals embedded in all kinds of rocks. Within rocks it usually appears as crystals, but may also appear as odd shaped masses. Pyrite is found in its bright and yellow form in placers only where the source veins are nearby as it readily weathers to limonite. This form of limonite formed from pyrite is common in many placer concentrates. When fresh and unweathered, yellow pyrite in some of its forms so closely resembles gold that it is known as fool's gold. For experienced prospectors, there is rarely any difficulty in distinguishing between the two. The chemical analysis of heavy-mineral concentrates that have been panned from stream gravels can give a guick reconnaissance prospecting method for many ore minerals that are resistant to chemical and mechanical destruction. The technique involves sampling the mouths of major streams to evaluate drainage basins that may have ore grade metal content. If unusual levels of a metal are indicated, then the anomaly can be traced up through a drainage basin by sampling along the main stream and all its tributaries, proceeding upstream until the anomaly stops. The source can then be found by tracing the metal away from the stream to the bedrock source by soil sampling and conventional geochemical prospecting methods. There are large advantages in this method of locating mineralized ground because it can cover large areas at a very low cost.

As an example, diamond pipes contain a garnet of specific chemical composition that is much more abundant in the kimberlite pipes than the diamonds themselves. Sampling of drainage basins to locate these kimberlite specific garnets is a low-cost method of finding hidden kimberlite pipes that may be outcropping in the area.

Sources

Theobald, Jr., P. K. and Thompson , C. E. ; "Geochemical Prospecting with Heavy-Mineral Concentrates Used to Locate a Tungsten Deposit;" US Geological Survey Circular 411; Washington, D. C., 1960.



Any prospector who processes enough placer gravels will end up with concentrates of heavy minerals like these two pans show. There may be a variety of different minerals in these concentrates.



When processing a larger quantity of gravel such as through larger-scale commercial equipment like this, one will often end up with a much larger quantity of heavy mineral concentrates at the end of the day. It's worthwhile to know what unusual minerals might be in those heavy concentrates with the gold.

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