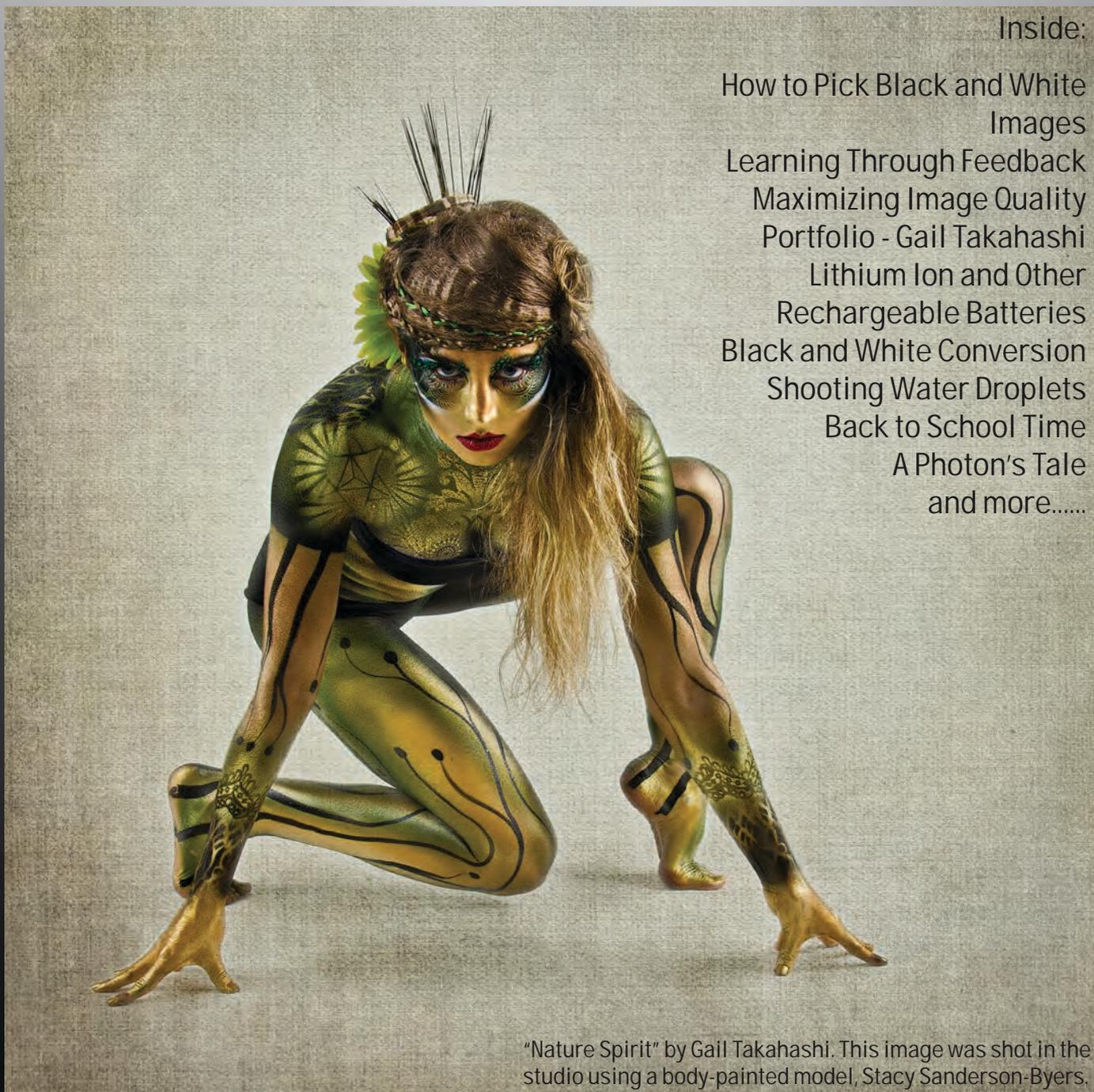




# Close-Up



Inside:

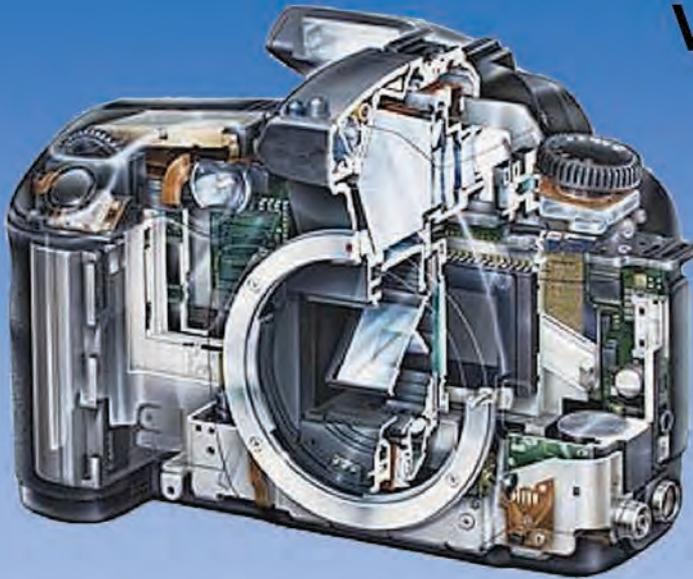
- How to Pick Black and White Images
- Learning Through Feedback
- Maximizing Image Quality
- Portfolio - Gail Takahashi
- Lithium Ion and Other Rechargeable Batteries
- Black and White Conversion
- Shooting Water Droplets
- Back to School Time
- A Photon's Tale and more.....

"Nature Spirit" by Gail Takahashi. This image was shot in the studio using a body-painted model, Stacy Sanderson-Byers.

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## Victoria Camera Club

*Close-Up* is the magazine of the Victoria Camera Club,  
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 Mailing address: PO Box 46035, RPO Quadra, Victoria, BC, V8T 5G7.  
 Deadline for submissions for the November issue is October 5<sup>th</sup> 2014.  
 Editor, Richard James, e-mail to [newsletter@victoriacameraclub.org](mailto:newsletter@victoriacameraclub.org)  
 for submissions or to advertise in *Close-Up*.

Established in 1944, the Victoria Camera Club is a group of people who share the love of photography. We come together to appreciate each other's images, to learn, both from the feedback on our own images and from the images of others, and to exchange tips on how and where to take effective photographs. Our focus is on continuous learning. Our media include both film and digital and our expertise ranges from novice to master.

### Events

We hold a number of events including:

- Three meetings a month from September to April (excluding December)
- Field trips
- Workshops
- Special Interest Groups (SIGs)
- Competitions within the club and externally

Meetings begin at 7:30 PM at Norway House, 1110 Hillside Avenue, Victoria, BC.

### Membership

Annual fees include all workshops (except studio shoots and special events), meetings and all field trips unless travel/accommodation is involved. Annual fees are: Individual, \$85; Family, \$128; Student, \$43.

For current event information and locations please go to the website [victoriacameraclub.org](http://victoriacameraclub.org) where you can also read or download the colour version of *Close-Up*.

For additional information: please contact the appropriate Committee Chair:

- Membership:* [membership@victoriacameraclub.org](mailto:membership@victoriacameraclub.org)
  - Workshops:* [workshops@victoriacameraclub.org](mailto:workshops@victoriacameraclub.org)
  - Field Trips:* [fieldtrips@victoriacameraclub.org](mailto:fieldtrips@victoriacameraclub.org)
  - Meetings:* [meetings@victoriacameraclub.org](mailto:meetings@victoriacameraclub.org)
  - Website:* [webmaster@victoriacameraclub.org](mailto:webmaster@victoriacameraclub.org)
  - Close-Up:* [newsletter@victoriacameraclub.org](mailto:newsletter@victoriacameraclub.org)
- or call Lloyd Houghton, President at 250-580-7154.

### What's Inside

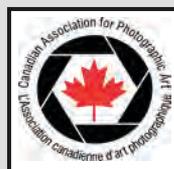
Club Calendar.....	4
President's Message .....	4
How to Pick Black and White Images .....	5
Learning Through Feedback .....	6
Maximizing Image Quality .....	7
Competitions .....	8
Portfolio - Gail Takahashi .....	10
Lithium Ion and Other Rechargeable Batteries .....	15
Black and White Conversion .....	15
Shooting Water Droplets .....	17
How I Did It.....	18
Shoots Around Victoria.....	19
Back to School Time.....	20
A Photon's Tale .....	21

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**Member Discounts: VCC members can take advantage of discounts offered by several retailers in Victoria. Details are on the members only page on our website.**

The Victoria Camera Club is a member club of the Community Arts Council of Greater Victoria (CACGV), Canadian Association for Photographic Arts (CAPA), and the Photographic Society of America (PSA).



## Calendar

Our workshop and field trip program is too extensive to list in *Close-Up*. Please go to the calendar page on the website ([www.victoriacameraclub.org](http://www.victoriacameraclub.org)) for the latest details of all our workshops, field trips and meetings.

### Thursday, Sept. 4<sup>th</sup>; Competition Night

We will review the competition guidelines. Please note that the submission deadline for this month only is Thursday 11<sup>th</sup> September. Please see the Competitions page on the website for details.

### Thursday, Sept. 11<sup>th</sup>; Presentation Night

Please see the calendar for details.

### Thursday, Sept. 18<sup>th</sup>; Members' Night

Presentation of members' images, field trip slide shows, prints or short technical topics.

### Thursday, Oct. 2<sup>nd</sup>; Competition Night

The September competition results will be presented. One of the judges will review selected images. October Competition submissions are due. Please see the Competitions page on the website for details.

### Thursday, Oct. 9<sup>th</sup>; Presentation Night

Please see the calendar for details.

### Thursday, Oct. 16<sup>th</sup>; Members' Night

Presentation of members' images, field trip slide shows, prints or short technical topics.

### Featured Workshops

Basic Digital Photography for the Novice: 4 sessions

Novice Image Review (New - monthly)

Lighting SIG Model Photoshoot

### Featured Field Trips

Saanich Historical Artifacts Society Harvest Fair

Millstream Miniature Llamas

Tofino: Bears, Beaches and Rain Forests (4 days)

**Meeting, field trip and workshop visitor policy:** Visitors are welcome to attend any three events in a two month period subject to the availability of space and a \$20 per session fee for workshops.

## President's Message

Clubs are always looking for volunteers, that's the way it is. It can be strength and a weakness. It is strength when someone who is passionate about something gets together with others eager to soak up every bit of knowledge and experience like a sponge. It is a weakness when there are people desperate to learn and nobody is able to share their knowledge and experience with them.

The executive recognizes that we must make sure that club activities are sustainable in the future. One of the threats to this would be reliance on a small number of members doing too much of the work. If one or two were to leave in a hurry, club activities could well take a big dive. Even if they were enjoying doing the work, this would still be a risk to the club that should be addressed. Are we in this position? Not across the board, but there are a few areas where we could do with some more help.

If you are one of our more capable members, you can probably remember the people that were generous towards you with their time, and that this was one the inputs that helped you get to where you are today.

If you're not currently active in the club, do you think that now might be a good time for you to give back a little? That way, the time that someone else invested in you can be passed on to others coming along behind. There are many ways that you could share your knowledge and experience with others. Field trips, workshops, and writing for *Close-Up* are three areas that could do with a few more volunteers right now. None of these have to be onerous undertakings.

Running a field trip can be as simple as arranging to visit a great place you've found for the kind of shots you're into. You don't need to do much more than arrange the day and time. How hard is that? You were probably going to go anyway. Why not take some others with you.

Running a workshop will not be everyone's cup of tea. But maybe you could give assistance to someone else, especially if the subject is something you're interested in.

What if your writing skills aren't up to making a contribution to *Close-Up*, but you think you know something about a subject that would be of interest to others? I'm sure we could find someone to help you with that.

So, have a think about where you might be able to help. We all need to be willing to give a little as well as take.

Lloyd Houghton, President

by Normand Marcotte

Last year I decided to finally print some of my images and display them in my home. I do not consider myself to be a "Fine Art Photographer" but I thought that many of the images on my computer hard drive would look great as Black and White (B&W) prints. But which of the thousands of images would deserve to be converted and printed? At first I picked images that simply appealed to me; then I realized that I should have a system. I needed a simple process for the image selection and wanted feedback on the images I selected in order to fine tune this process. So I took the leap, put my ego aside (I know it can be hard to accept comments from judges!!...what do you mean I did not get first place!...how dare you!...) and started to submit entries to the Club's Monochrome Competitions. I reasoned that the monthly competition was the ideal way to get feedback from judges and club members.

This is my selection process:

**Colour:** I look at the image (I never shoot in B&W mode on the camera) and ask myself, "Is there a story in this image? Is colour needed to tell that story?" Maybe the light is from mixed sources, natural, incandescent, fluorescent...etc. and difficult to balance. We get easily distracted by elements in photos with bright colours that really have nothing to do with the main story or subject; obviously a beautiful sunset picture would lose its appeal if you remove the bright saturated reds and oranges! B&W puts the emphasis on the other qualities of the image such as composition, mood, texture, graphic elements etc. If I find the colours to be an essential element of the photo I simply move on to the next one.

**Graphic Elements:** I look at the contrast range, forms, shapes, lines patterns and texture. I think that graphic images work very well in B&W, i.e. a composition that fea-



tures simple, strong lines and shapes with high contrast (wide tonal range from lightest of greys to pure black).

**Mood:** B&W photos can include a whole range of grey, which adds subtlety to the images. For example, a photo taken on a cloudy day, lacking contrast, may look flat, and lifeless in colour but if you remove the colour element, then the image's distracting colours are recast as subtle shades of grey. The lack of colour helps to focus on the mood of the image and gives it a timeless quality.



Many Master photographers like Ansel Adams preferred to work in B&W. He is famous for his landscape photos of the American West and he co-developed the well known "Zone System." He was a master of control and introduced pre-visualization, imagining what the final image would look like before taking the shot and exposing his negatives accordingly.

I currently use Lightroom 4 which works very well with the conversion from colour to B&W. I do not have Photoshop or specialized programs like Silver EFEX Pro and DXO Filmpak which can duplicate the looks of many films such as Kodak Tri-X 400, Ilford Pan Plus etc.

There are a countless number of websites on B&W photography, most focus on the conversion from colour to B&W. There are also magazines dedicated to the Black and White medium; for example "Black + White Photography" and "Black & White." These magazines can provide great inspiration and invaluable help on what makes a great B&W image.

Regardless of the processing software you use for the conversion, I recommend that you do the following:

1. Choose an image
2. Participate in the Club's Monochrome monthly competitions
3. Learn from the judges' feedback and fellow club members
4. Apply new knowledge
5. Repeat !!

by Judy Bandsmer

I joined VCC last year, and one main reason was to enter photos in a competition. I'd never done so before and never had any feedback on my photos from other photographers. I was very curious to see what people who knew photography had to say about my photos (as opposed to family and friends, who are usually pretty enthusiastic). VCC was a great, safe place to get feedback and help myself improve and try new things.

My favourite part of the competitions is the themes, what a great opportunity to learn a new technique or help you see things in a different light! Last year, with the "Orton" theme (see "The Quiet Café"), I learned a new technique. I would never have learned the technique on my own; I had never even heard of it before. I love the effect! I'm grateful that someone picked that theme and that I buckled down and figured it out.

The competitions definitely helped me develop as a photographer. I challenged myself last year to enter every category of photos every month, why? As a goal. To get out there shooting. To try new things. To put my work out there and get feedback. I didn't quite manage it, but I found great enjoyment in having that structured goal setup custom laid out for me, and learning new things in the process. And the novice judges are very encouraging, there's no "being mean" in the feedback.



*"The Quiet Café"*



*"Girl under the Pier"*

One thing I found invaluable to my development as a photographer was my analysis of the feedback (both of my own photos, and in the feedback of judges on other people's photos). Sometimes, when other people judged my (or other people's) work, I found myself disagreeing with their assessment. This in itself is a prime opportunity for reflection. Why did I disagree? Was it an ego-based experience, and was there a technique or composition opportunity to learn? Was there a difference in aesthetic sensibility?

One example where I disagreed with the judge, and my thought process: The judge's feedback that part of the reason for my less-than-perfect mark for "The Quiet Café" was that it was overexposed. In my case, I had overexposed the image post-processing on purpose, and I liked the effect, and in retrospect I still wouldn't change it. But why not? Because I like the dream-like feeling and the small pop of green left in the window that the overexposure creates. By the way, the photo was entered "as is" in the year-end competition and won an Honourable Mention, different judge, different eye.

I see photography as being an art form, and as such it has elements that are highly subjective. In my photo "Girl Under the Pier," two judges gave me two different marks: an 8/10 and a 9.5/10. Judges have opinions, and it is okay that I have opinions as well. The competitions helped me clarify what it was about photos that I liked. Was it the technical achievement? The creative point of view? The personality? The atmosphere? The colours? The play of light and shadow? The humour? The artistry? The composition? This thought process, I believe, is what makes us unique as individual artists, and I am grateful to VCC and the judges for helping me along in this part of my development, growing, as a photographer and artist, in both humility and confidence.

by Richard James

How much detail do you need in an image? For most images the answer is generally “as much as my sensor will give me.” Short of buying a new camera you’re going to have to get what you can get from the sensor in your current camera. So let us explore how you can maximize the amount of detail. This is necessarily an overview but will point you in the direction of further research or attending a workshop.

First off, there are a few key things to remember: always shoot and save your images in RAW format (the JPEG format is designed to throw data away!); convert your raw images into at least aRGB colour space but preferably ProPhoto, and save them as 16-bit TIF or PSD files (this is a setting in Adobe Camera Raw - ACR); use a raw converter that enhances local contrast (such as DXO Optics Pro); minimize the amount of cropping (get the framing as right as you can in the camera); learn and understand how to sharpen your images correctly, all digital images need sharpening!

Now let’s look at some key things about the shot itself and how you will process it. Most of these processing steps can be done in either Photoshop or Lightroom although the mechanics of doing it might differ between the two.

Is the exposure right? One of the really important advantages of a digital camera is the ability to look at the shot the instant you’ve taken it and to examine the histogram. The histogram is key to getting the exposure right, so understanding it is critical. The “perfect” histogram will have the highlights almost, but not quite, touching the right end of the display and the shadows almost, but not quite, touching the left end. Almost all current DSLRs have a white histogram but the really important one is the RGB histogram which shows each colour channel separately. The problem with white is that it’s the average of the three primary colours recorded by the sensor. It is quite probable that if one colour channel is overexposed (blown) that the average will still show as not that bad on the white histogram. The problem really arises if you have images that are predominantly one colour such as the reds of the US Southwest deserts or the blues of our marine environment. In these cases, if you have blown the red or blue channel, you are very definitely losing significant data in your image.

Raw conversion is a critical stage and it is important to do as many adjustments as you can here. You should enhance the local contrast and make a number of other

changes such as correct colour balance, adjust overall exposure, brightness and contrast, colour saturation, geometric and lens distortions and, if required, fine tune noise reduction. After your raw conversion you may find that there are still a number of things that need tweaking in either Lightroom or Photoshop.

Exposure is almost always a compromise unless you have a very flatly lit scene. So the question becomes which do you sacrifice, the highlights or the shadows. It’s almost always correct that you sacrifice the shadows and retain the highlights as that is where the human eye is most sensitive to detail.

Now that we’ve dealt with the overall exposure let us look at the range of exposure within the image. As discussed above, ideally we want a full range from almost pure white to almost pure black. While some images may have that initially, many do not and we need to adjust this in processing. This is where the levels tool comes in. This allows you to adjust the tonal range to achieve the full-scale objective. It also allows you to adjust the mid-range tones to an appropriate level of brightness.

Now you’ve done this but the image still looks “a bit flat.” So the next step is to adjust the contrast which you can do either directly manipulating the tone curve or using the on-image adjustment tool to drag points in the image up or down making them lighter or darker compared to the rest of the image.

Now you need to check all the colours and see if they adequately reflect your vision of the scene, the vision that you want to project to the viewer of your image. This is where the HSL (hue, saturation and lightness) adjustment comes in. You can optimize the colours either individually or in the entire RGB colour space at once.

These are the major adjustments that you may need to make but there is an important consideration as you apply them. Do they need to be applied to the complete image or only to certain parts of it? This is where masking of the various adjustments comes into play. Photoshop and Lightroom approach this in different ways. Photoshop’s approach using masks is potentially more precise but Lightroom’s “selective adjustment tool” is easier to use and may well work for the majority of your images. In essence, a mask allows you to apply a change to a specific part of the image without affecting the rest and is a really powerful tool in image editing.

## October: Delicate

by Don Peterson

“Delicate” can refer to a fine and intricate structure, to a subtle or subdued colour or light, or to something that is tiny, fragile or easily broken. So, from spider webs to fine china, from veins in a leaf to snowflakes, from little ballerinas to the inner workings of a fine timepiece, the possibilities with this theme are endless!

**Equipment:** This theme can be approached with a wide range of camera and lens combinations. “Delicate” subjects can be easily captured with wide-angle, normal and telephoto lenses. However, many potential subjects in this theme are small so you may want to use this as an opportunity to practice your macro techniques.

**Lighting:** As always pay very close attention to the direction and quality of light while examining your subject through the viewfinder. Approach your subject from multiple angles while paying attention to how light from different directions impacts your subject. Consider shooting from the shadow side as back-lighting will often emphasize delicate structures like a web. If shooting with macro you may need to enhance the light with a reflector or flash in order to effectively illuminate your subject and increase your depth of field by allowing a smaller aperture.

**Be Composed:** When shooting a theme bear in mind that your image will primarily be judged on its strengths as a photograph. This means that the decisions you make when composing your image will be critical to its success. When framing your image in the camera, think about how to add balance or tension and how to lead the viewer’s eye to your primary focal point. Patterns, leading lines and textures can all work to enhance your image. Does your depth of field emphasize or isolate your subject? Always check the background and avoid including distracting features such as bright/coloured areas or stray objects. Successful theme photographs are also successful photographs!

**Be Creative:** You want your theme photograph to stand out from the rest by being unique in some way. Try to think outside your usual box and open your mind to all possibilities as you decide how to portray your “delicate” subject. Then, try to shift your thinking away from creating just a technically perfect photograph to creating an image that shows a unique and creative vision. There are risks involved but as Pablo Picasso said “The chief enemy of creativity is common sense.”

## November: Light

by Don Peterson

Simply put, light is the most important factor in any photograph. For this reason photographers must constantly observe and evaluate the quality of light around them. But how does one actually photograph light as a subject? This is the challenge of our November theme.

Natural light provides many opportunities to tell the story of light; the warm glow from a sunset on a beautiful flower; or the cool, pale light of the moon casting black shadows on the edge of a forest. The time of day, the setting and environmental conditions give us opportunities to explore light as a subject. It is often accepted that the best natural light is found during the “golden hours” just after dawn and just preceding sunset. Other times of the day, or night, may also provide inspiring opportunities for this theme. Even the harsh intensity of light at mid-day may provide inspiration for you to convey the true nature of light.

But there are many kinds of “light” besides natural light and you are free to choose any of the alternatives as you pursue this challenge. Also, the word “light” has other meanings and you are not restricted to the definition of light in the photographic context.

For example:

As a noun:

- An illuminating object or source, such as the sun, a torch or a beacon.
- The radiance or illumination from a particular source: e.g. the light of a candle, or the light through stained glass.
- Of little weight; not heavy: a light load.

As an adjective:

- Pale, whitish, or not deep or dark in colour: a lighter shade of pale.
- Having light or illumination; bright; well-lighted: it was the lightest room in the entire house.
- Using or applying little or slight pressure or force: the boy petted the puppy with light strokes.

As a verb:

- To take fire or become kindled: light the fire, the lamp.
- To brighten the mood with joy, as seen in the face or eyes.
- To come to rest on a spot or thing; to fall or settle upon; to land: The leaf lighted on the forest floor.

Good luck and we look forward to seeing how you have interpreted our theme for November.

## What's New in Competitions?

There are a few changes to the competition guidelines this year. The significant ones are the way that novice and intermediate participants will be moved up at the end of the year, the addition of the theme category to the annual competition and a change in the nature category rules. The guidelines have been extensively reworked and separated into two parts, the rules, and a more descriptive section. Competition guidelines are available on our website under the competitions tab.

For the nature category, we are adopting, in part, the new FIAP/PSA nature definition which allows images of subjects that are living in "controlled" conditions. We are not going to implement a separate "authentic wildlife" category which excludes subjects in controlled conditions. Domestic animals (pets, farm animals etc.) and cultivated plants (garden plants), artificial plant hybrids, feral animals etc. are still not allowed in the nature category. The "hand of man" must not be present in any nature image with the previously stated exceptions of wildlife living in and around artificial structures such as barn owls, herons, ospreys etc. and

where the man-made part is incidental to the image. For example, in an image of the barn owl, the owl is the key feature and the barn structure must be minimized.

Our workshops committee is going to organize a series of "image review" sessions that will be initially aimed at our novice members. Members will be asked to submit images for review by our novice judges outside of the competition structure. This will allow the maker to make suggested changes before the image is submitted for competition.

We will be looking at the types of images submitted for competition (at all levels), club slideshows etc. with the intention of identifying issues that can be addressed in future workshops or articles in *Close-Up*.

We will also be looking carefully at our workshop program to ensure that we have an adequate mix of novice, intermediate and advanced level sessions to cover the full range of members' abilities.

These workshops will of course be of interest to members who wish to improve their images irrespective of whether they are entering competitions or not.



## "ON REFLECTION" October 16 - 28, 2014

On display at the Community Arts Council Gallery Cedar Hill Recreation Centre  
(Gallery Hours Monday - Sunday 8:00am - 9:00pm)

In Celebration of its 70th Anniversary The Victoria Camera Club  
Presents the "On Reflection" Print Show.

This show will be Held in Conjunction with the Launch of a  
70th Anniversary Book Celebrating Members' Images.

Open to Public    Opening Reception October 17, 2014    Free Admission  
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Opening Comments by Internationally  
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For further Information Contact Hanna Cowpe  
[printshows@victoriacameraclub.org](mailto:printshows@victoriacameraclub.org)

Photo Credit Rene Pauze

## My Photographic Adventure

*By Gail Takahashi*

I wish I could say that photography has always been a part of my life but that is not the case. My adventure in photography began six years ago. The Victoria Camera Club met informally in the summers at a coffee house at Fisherman's Wharf. I lived in the area at the time so decided to go and find out what it was all about. With a little apprehension, but armed with the desire to learn all about photography, I met with a small group of club members. I soon realized how little I knew and how much there was to learn.

The only camera I had at the time was a Nikon Point and Shoot. It didn't take long to graduate to a Nikon D60, then the D7000 and to the D7100 that I am using today. Shortly after joining the club a few of the club members recommended taking some classes at Camosun College. So in the spring of 2009 I signed up for a three month course taught by Mitch Stringer at Camosun College. I also took a two month course in the fall that same year on nature/travel photography.

In January 2010 I was participating in a club field trip shooting panoramas in the inner harbour and the downtown Victoria architecture. There was a new club member on the field trip and we began chatting. Two years later Dan and I were married!

Dan is a very talented and experienced photographer. (And I'm not saying that because we're married.) He has become my mentor and raised the level of my photography. I can't say enough about having someone able to look at your work and give suggestions on how you could improve your image or let you know when you've achieved a great image.

Dan has been extremely patient with that endless question, "What aperture should I use?" If he had a dollar for every time I've asked that question he would be able to buy a Nikon D4S. Well perhaps not the D4S but at least a new prime lens. I'm always amazed that we can stand side by side, shoot the same subject but come away with different images.

During the first two years with the club I didn't enter the monthly competitions. When Dan and I began shooting together he strongly encouraged me to enter the competitions. Being a very novice photographer I was extremely nervous about putting my images out there. What a great learning curve! For any of the new

club members that haven't entered the competitions yet, I would highly recommend it. It is a great chance to have people look at your images in a very supportive environment. I also make it a point to attend as many workshops and field trips as I can. Not only do I learn but it is a lot of fun and I meet some great people.

Last summer I began an on-line course to learn Photoshop called Photoshop Artistry. The course taught all the technical aspects of working with Photoshop, but the main purpose of the course was to encourage photographers to become more creative with their images. Photoshop was merely a tool to achieve creative results in photography. I am still working full-time so it became a matter of fitting the course in and still getting out to shoot the images to work with in my spare time so I could put into practice what I was learning. Becoming familiar with Photoshop really opened up my eyes to what you can do with an image. I tend to use filters as well in my post-processing such as Nik, Topaz and Perfect Photo Suite. I enjoy the post-processing now that I have the Photoshop tools to work with. However, I do remind myself when I'm out shooting to keep the basic principles in mind. Not everything can be fixed in Photoshop.

I find at times when I'm working on an image, I think it is finished, but then usually come back to it for tweaking until I have that "Aha!" moment when I just know it's what I was trying to accomplish. There are times when I have ideas and try them but can't quite get out what I envision in my mind. So I put it aside and revisit it, and sometimes it gets scrapped and you realize it just wasn't a good image to begin with.

I usually have a basic idea in mind when I start working on an image, but as I am working it can flow into a totally different direction and I end up with something that I wasn't expecting. Those seem to be the images I have the most fun with.

This spring I was very fortunate to be part of a small group organized by Herman Surkis that went behind the scenes of Ballet Victoria in two separate sessions. Each session consisted of photographing the dancers in rehearsal in their studio over the course of three weeks, a performance the Ballet puts on for seniors called Tea for Tutu and their final dress rehearsal in the theatre. What a challenge. I have to say it was the most challenging photography I have done. We were trying to catch the dancers at the peak of their moves under challenging lighting conditions. Pushing



*“ '32 Ford V8”*



*“The Dancers”*



*“The Rehearsal”*

our ISO from 3200 to 6400 was not uncommon. It was an extremely rewarding experience and I truly appreciate the effort and hard work the dancers put into their performance. I have also come to appreciate the beautiful art of ballet. Thank you Herman and Ballet Victoria!

If you were to ask me what I consider my style to be, I'm not sure I could answer it. I enjoy all aspects of photography from abstract to nature/landscape to creative to models and dancers. I find the more experienced I get the more my photography is evolving. I see the world with a different eye. I see more colour, patterns and shapes in ordinary objects that I would have passed by before as nothing special.

I am of a mixed mind when it comes to how much altering should be done to an image. I would like to improve my skills to a point that I can take a WOW photograph with just the basic adjustments needed but I also like expressing my creative side with a mixture of images, textures and backgrounds. At the end of the day we are photographers and artists expressing ourselves through our photos. If we can evoke a thought, memory or emotion from the viewer, then we have achieved something.

Sometimes when I go out shooting I have a specific purpose in mind. I may be looking for a particular image that I want to work into a composite. Most of the time it is just for the sheer joy of being out there with my camera in my hand. When I am shooting, all the day to day things that seem to occupy so much of our time just slips away. I think that starting photography later in life has inspired me to make up for lost time.



*"Hornby Island Sunset"*



*"Ruby Beach"*



*"Spring in the Palouse"*

I am constantly reminded of what a wonderful world we live in when I see the images produced by the members of the Victoria Camera Club whether they were taken in an exotic location or in their own backyard. We have a very talented group of photographers that are very generous with their time and passing their knowledge along to others. I have to thank the club members for their advice, support and encouragement over the last few years.

But mostly, I have to thank Dan for sharing this adventure with me.

Nature Spirit (cover image): This was taken at a Club shoot using studio strobes. Stacy was lit on both sides using softboxes and a beauty dish in front. Although body painting took several hours, the beautiful Stacy was able to pose and dance as a graceful Nature Spirit.

'32 V8: In 2013 Victoria hosted the "'32 Club" attended by cars from across Canada and the USA. This is a composite of two images: one of the car and one of the hood ornament. The original image almost had a surreal look to it so I emphasized it by adding a Topaz Adjust filter to it and to the hood ornament image. I put a grey mask over the background but reduced the opacity so some of the background showed through. I then placed the hood ornament over the car using a screen blend mode.

The Rehearsal: This was taken during one of the Ballet Victoria rehearsals in their studio. This was shot at f3.5, ISO 3200 with a shutter speed of 1/400.

The Dancers: This image was taken during the dress rehearsal at the Royal Theatre for Ballet Victoria's production of Carmina Burana.



*“Electric Alley”*



*“The Hummingbird”*



*“Olympic Peninsula Eagle”*

**Ruby Beach:** Ruby Beach is located on the west coast of Washington State. This was taken on a soft, misty morning. The beach is known for its fantastic sunsets.

**Hornby Island Sunset:** Another beautiful west coast sunset taken from Hornby Island.

**Electric Alley:** This is a composite image. The alley in Bastion Square was taken in the morning. I used a luminosity and soft light blend and adjusted the levels to desaturate it and give the alley a darker look. The model was taken during a Lighting SIG studio shoot against a black background. I blended the images together and overlaid textures to give the appearance of a dark alley. I brushed in some light beams.

**Spring in the Palouse:** In 2010 club members attended a PSA conference in Spokane, WA, with a guided trip to the Palouse. The rolling green hills and bright yellow canola fields are a photographer's dream. This panorama is two images stitched together. The light was very hazy so I used a Topaz filter to help bring out the rich colours.

**The Hummingbird:** This image was taken at Royal Roads. This little hummingbird comes back to the same spot every spring and perches on the same branch. I used a shallow depth of field which enabled me to get the soft background.

**Olympic Peninsula Eagle:** On a club field trip to the Olympic Peninsula we came across a boat launch that had at least a dozen eagles circling around looking for lunch.

**Cowgirl Kelsey:** was shot at a Lighting SIG model shoot. The lighting was uniform with a softbox on each side and a beauty dish at the front. Kelsey was fun to work with and extremely photogenic.



*“Cowgirl Kelsey”*

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## Lithium Ion and Other Rechargeable Batteries

by John Roberts

One of the things that is asked of us quite regularly is how long to expect a rechargeable battery to last, and why do they start to lose their charge after sitting for a time. I thought I would go over what makes batteries tick, and what to expect of them.

Most cameras nowadays use Lithium Ion batteries. These are super compact and pack a lot of power for something so small. This has allowed cameras to continue to get smaller. This is the same technology that batteries in cell phones, tablets, laptops and other devices are using. So this technology is very proven and quite long lasting in power and overall life.

The first thing to know about Lithium Ion is that it is a no-memory type of battery. Unlike older Nickel Cadmium (Ni-Cad) or Nickel Metal Hydride (Ni-MH), which you were required to fully charge and fully discharge every time you charged them, the newer Lithium Ion batteries absolutely love to be kept in the 60% and above charge range. So you can use one for a day, then just top it up.

The important thing to do with your new battery is to fully charge it before you use it for the first time, and to fully discharge it before recharging it. That sets the parameters of the chemistry. From then, you can just use and top up as you see fit. It is very important to do that full charge and discharge to get the most out of your battery life.

As for the longevity of your batteries, after 2 to 2½ years from the first charge the chemistry starts to break down and you will see fewer photos per charge. It will get worse as you get into the three to four year range of life.

As a working wedding/portrait photographer, I replaced camera and rechargeable AA batteries once every eighteen months. I would write the date of the initial charge on the batteries. I would buy in batches, so I would do it all at once and not a set here, a set there.

So if you have been wondering why your camera has not been holding as much of a charge as of late, and you have had your camera for more than three years, now you know it is just the chemistry slowly losing its ability to retain the charge like it once did when new. So now might be a good time to go and get a new battery.

## Black and White Conversion

by Richard James

In Normand Marcotte's article on page 5, he discusses how he chooses a colour image to be converted to black and white. Now let's take a brief look at the technical side.

Sure, you can simply change the mode from colour to greyscale mode but this is almost certainly not going to give you an acceptable B&W image. The key issue is that without further adjustment this simply takes the greyscale value of each pixel and discards the colour information. What happens if two different colours, for example yellow and blue, have the same greyscale value in adjacent pixels? The answer is, you can't see the difference so the detail disappears.

As *Close-Up's* editor I have had to convert hundreds of images made by other photographers into B&W for use in our magazine. This is a circumstance where I have no choice over the image; I simply have to make it work!

I've already given you the challenge, make two colours with the same greyscale value look different. Again, Photoshop and Lightroom are slightly different. In Lightroom click on "B&W" in the develop module which will reveal 8 colour sliders. Adjusting these changes the impact of those colours on the greyscale image. Changing the green and yellow sliders will have an impact on foliage colour, but little change on a blue sky. In Photoshop, in the adjustment layers panel click on the B&W icon which will reveal similar sliders and create an adjustment layer which you can go back to later and fine tune.

In many cases adjusting these sliders by themselves is sufficient to give you adequate separation of colours as tones. However, some images may require masking if there are different areas that you can't get to look right with a global adjustment. Masking may sound challenging but with an understanding of the various tools and a little practice, it's relatively easy to make a good job of it.

Now you have a B&W image with good greyscale separation but it might still look a little flat and muddy. This is where you go to the levels and curves adjustments referred to in the article "Maximizing Image Quality" on page 7. There are also a number of plug-ins that give you additional control and enhancement of your black-and-white conversions.

There are other considerations in creating a great black and white image but those will have to wait for another article or workshop.



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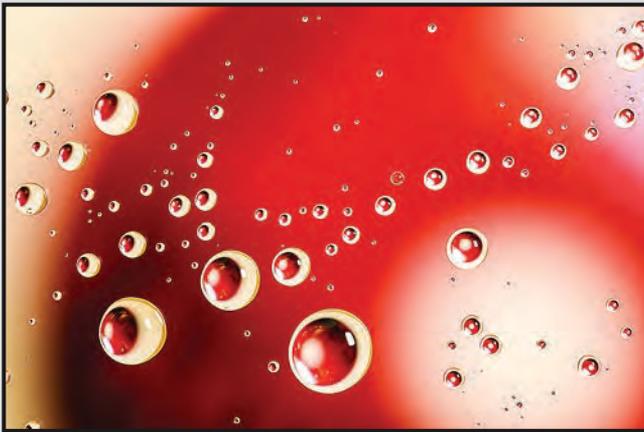
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Bridging Photo Technologies

by Scott Laird

I decided to improve the way I shoot water droplets. To help, I used an on-line reference for the lighting that is based on the Adorama TV/Snap Factory YouTube video episode 221 (<https://www.youtube.com/watch?v=i4fstG1gezU>).

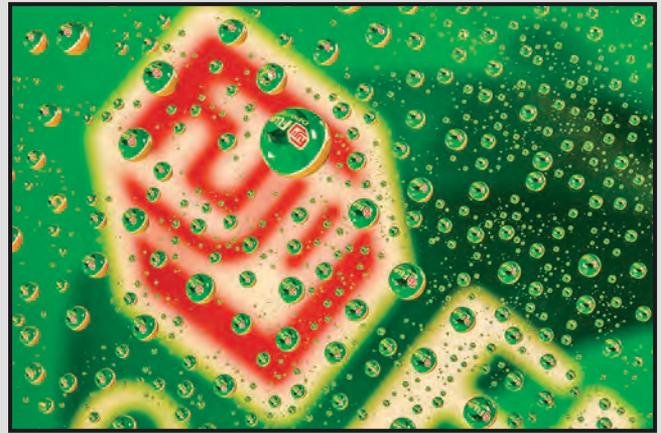
I placed a sheet of glass from a 16 x 20 picture frame on a bare table top and raised it about 6 inches above the table using six old VHS tapes on both short sides. The glass was conditioned with "Rain-x" water repellent. This product will assist with producing the water droplet patterns typical of this type of photography.



The Canon 5D Mark III camera, with a Tamron 90 mm macro lens, was mounted on a tripod with an extension arm to place the camera directly over the centre of the glass. Adjust lens distance to subject to taste.

A SpeedLite (Canon 600EX-RT) was mounted on a rolling stand with a grip arm and moved into position about 6 inches above and to camera right of the glass surface. I used a TTL cord for connecting the camera to the SpeedLite. (Normally I use a grip with this camera and mount a SpeedLite on the camera as the master but this is a lot of weight for the tripod extension to carry. So I "stripped down" the camera by removing the grip and used a TTL cord instead of the camera mounted SpeedLite master.) All SpeedLite settings were adjusted from the camera LCD in TTL mode.

Water was sprayed onto the glass surface with a plastic spray bottle. A few short squirts will do. A spray bottle with an adjustable nozzle works best as you can adjust the water droplet size to taste (well, sort of!). Make sure there is no trace of soap in the bottle as this will affect the appearance of the droplets. Also make sure that the glass is clean on both sides otherwise you may have dust on the underside that will be picked up in the image.

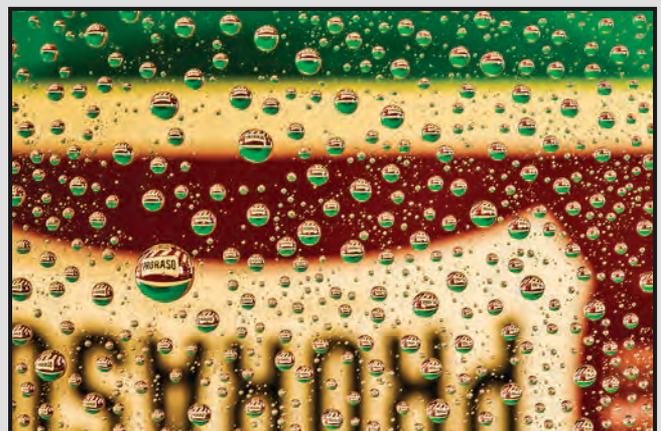


I placed a flat object directly underneath the glass to provide a backdrop to the water droplets. This adds colour and texture to the image. Adjusting the f-stop will vary the interpretation of the background so experiment.

Composing the image and adjusting focus was achieved using LiveView. In my opinion LiveView is a must and greatly simplifies this technique. I initially tried auto focus but I had better results with manual focus as you can define whether the focus point is to be the edge of the droplets or the centre.

Even though the camera was anchored securely to a heavy duty RRS tripod there is still movement shake at the end of the extension arm. The camera was set with mirror lockup and ten second shutter delay.

Images were shot as RAW images and processed in LightRoom 5 with adjustments to the contrast, clarity, vibrancy and saturation (to the right) to taste. The images are not perfect (you can see the flash in the droplets). I didn't intend these to be perfect but to be a learning experience. Hopefully others will try this technique. It makes for a great indoor project when the weather is too crappy to venture outdoors!



## Reflections

by Rene Pauze

This image is a composite of individual frames combined to achieve the final outcome. Numerous photos were taken of each of the items and then I selected the ones that I thought best suited the concept that I had in mind.

It all started with a glass vase, two LED flash lights, some fresh cut flowers, including a very bright red rose, a tripod, a camera, a wide angle lens, a quartz countertop and a very understanding wife to work the lights and shutter release cable.

I won't bore you with the details about how to shut off the lights (my wife) or how to use the cable release (my wife) or even counting from 15 to 30 seconds in your head (my wife) while manipulating the flashlight (yours truly), but in a nutshell, that was pretty well how it happened.

I lit the inside of the vase which cast a reflection onto the quartz top. Next the lights were waved behind the vase and over the top. And lastly, the rose was lit from above which again cast a reflection onto the quartz countertop. I imported the images into Lightroom, chose the ones I wanted and then opened them in Photoshop for some cutting and pasting. I also added some flowers to the vase. Then I returned to Lightroom for some final adjustments to remove the shadows, enhance the light and add a little saturation.

This photo was actually created for a prior theme competition, "Artificial Light," and it was a throwaway that never made it to the recycle bin. It goes to show, be careful of what you throw out... it could be a winner!



## Beach Huts at Southwold

by Hanna Cowpe

Every year we make a trip to England to visit family, and this trip provides me with an opportunity to find photography subjects and locations that are different than the ones I frequent here on Vancouver Island. As I've spent most of my life living on or near the coast both in Canada and England, I am always drawn by this type of scenery.



Southwold is a charming seaside town in Suffolk, north-east of London, on the east coast of Great Britain. The colourful beach huts are a pleasing contrast to the wild grassy dunes and pebbled shore and a symbol of the quintessential summer seaside vacations of the British people.

I am frequently inclined to photograph the back of subjects, rather than the front, in order to show a view that many people overlook or dismiss. Here, it also enabled me to combine the sea and the dune grass in one image and to present the view that one sees on approaching the beach for the first time. It also provided plenty of texture in the water, sand and grass against the varied colours of the board siding of the huts.

The image was taken with a Canon EOS Rebel T1i with a Canon 24-105 mm L lens at 24 mm, ISO 200, f18, at 1/250 second, hand held.

As with most of my images, post-capture processing was minimal, limited to slight adjustments in contrast and curves and a little saturation and sharpening. I prefer to spend my time outdoors behind the camera rather than indoors in front of the computer.

## Tuesday Shoots

by Wayne Swanson

**September 9: Blast from the Past.** When Hannah Maynard set up her Photography Gallery in Victoria in 1862, Victoria was the largest city north of San Francisco. Lower Johnson Street consisted of numerous hotels, bars and brothels to serve the miners on their way to the gold fields. Chinatown was notorious for its opium factories and gambling dens. The city fathers also had the foresight to create parks, like Beacon Hill, and beautiful buildings such as the Empress Hotel.

Given this history, what would Hannah's images look like? We want you to create something that looks like it belongs to the past.

Use muted colours or black and white or sepia, etc. to give your image the feel of an old photograph. Subjects could include buildings, horse-drawn carriages, statues and lampposts.

**September 23: What Shape are You?** The physical world comprises many geometric shapes: circles, ovals, rectangles, squares, triangles, etc. Look for them all around you: You will find squares in the tiles under your feet, see circles in manhole covers and follow triangles on sailboats going by.

For this shoot, we will assign you a shape and ask you to take as many photos containing that shape as you can. Note: We will assign you a shape at random. The challenge will come in finding that shape, and, hopefully, this exercise will sharpen your powers of observation.

**October 14: Harvest Bounty.** The iconic ripe pumpkin patch can't be used to show a harvest bounty in an urban setting. So what does illustrate our theme in the downtown area? That is the challenge. Perhaps you can look for urban gardens or local markets. You need to put some thinking into this one to come up with some original ideas.

**October 28: Junk.** According to Webster, junk is useless or worthless stuff. Of course, this definition begs the question: for whom? Can you find cast-off stuff being used in creative ways? Is there art in garbage? Perhaps you can turn someone's throw-away items into a beautiful photo. Keep your eyes out for interesting lighting or angles that create an unusual view. Give it a try.

## Weekend Shoots

by Dave McLean, Donna Robertson and Vicky Vintr

Fall is a good time for fairs. There is the Saanich Fall Fair Aug. 30 and 31 and the Luxton Fall Fair Sept. 12 to 14. We can warm up our fair photography with the Saanich Fair and know what we want to shoot by the Luxton Fair.

**August 30: Saanich Fair.** For this we plan to start at 4:00 so we can stay until evening to get low light pictures of the rides. The Saanich Fair includes rides, dog and horse shows, stage entertainment and more.

**August 31: Classic Boat Festival.** This is on the last weekend of August. Dave McLean will lead a trip there starting at 9:00 am in the Inner Harbour.

**September 6: Millstream Miniature Llamas.** We are planning a tour starting at 3:30. The tour costs \$10 each and lasts 1 ½ hours but we can stay longer if we want. They have 24 llamas and some babies which we hear are very cute.

**September 13: Saanich Historical Artifacts Society.** Their Harvest Fall Fair is on Sept. 13 and 14. We plan to be there at 9:00 on the Saturday. It has also been a popular event with the club in other years. It features historical farming equipment, some of it being demonstrated. There is also an operating model railway, blacksmiths with sparks flying, authentic old schoolrooms, and rusting relics. Last year the place was alive with vehicles, machines and the unique characters devoted to preserving them. Occasionally an old steam engine blows a gasket in the main square and fogs out the food vendors so pay attention for unique shots. There is plenty of action with flames, steam and sparks and the expressions on the faces of people coming out of train tunnels. There were also quiet corners with frogs and flowers.

**September 14: Luxton Fair.** This includes motocross dirt biking as well as rides, historical artifacts, a truck and tractor pull, blacksmithing, chain saw carving and more. The fair opens at 9:00 but we plan to be there at 1:00.

**October 24 to 27: Tofino.** Our yearly trip to to shoot storms, beaches, rain forests and likely black bears. This trip is almost full. See the website for details or contact Richard James if you want to be on the waiting list.

## Back to School Time

by Nancy MacNab

With September come the familiar, fond or not-so-fond memories of going back to school, backpacks or bags full of books, pens, paper, and other school supplies. Even if our school days are well behind us, as the days shorten and the weather starts to drive us indoors, we start to wonder what to do now that the outdoor summer occupations are no longer filling our evenings.

For those who are now reviewing their summer photos, that may include wondering where you can learn how to take better pictures. Whether it is dissatisfaction with your current results, finding that gem and wondering how to take another one as good as that one, or curiosity about a different aspect of photography, there is sure to be someone somewhere who is teaching a course that you can take.

Your first stop, of course, should be the Victoria Camera Club. The meetings and field trips offer informal opportunities to ask questions of your fellow members, who are always glad to help. If the person you ask doesn't know the answer himself, then they usually know whom to ask.

A more formal setting for learning at the Camera Club is during the various workshops taught by various members. From one evening to several sessions in length, with or without a field trip to practice what you have learnt, the workshops cover everything from basic camera operation and composition to lighting (flashes or studio lights), night photography, various aspects of computer programs and more. See the listing in the calendar section of the club's website for more details ([www.victoriacameraclub.org](http://www.victoriacameraclub.org)). Remember, our workshops and field trips are generally free for members.

You can also turn to our local educational institutions for learning opportunities. Camosun College, Royal Roads University and the University of Victoria all offer photography courses through their Continuing Studies programs. Don't forget your local recreation centres as another source for photography courses. From one to several sessions in length, they cover everything from the basics of photography to travel, portraits, and specific aspects of photography.

Professional photographers may also teach courses, lead workshops or field trips, and guide tours to various locations worthy of a visit, camera in hand. If you want

to go to Botanical Beach or Tofino, the Bahamas or Turino, there is probably a photographic tour if you look around.

Photography magazines advertise various courses, workshops, colleges and tours offered by various schools or pros. If possible, be sure to check with people who have taken previous sessions for their feedback. The camera club members may be able to guide you in the right direction as many have already taken the courses or tours you are considering.

The internet is another source of information and inspiration. Online schools are available, as are informal groups who post photos and comment on them. As an easy starting point, try the camera club's forums, where members can post photos and/or comment on those taken by others. Go to the club's website, Blogs & Forums, and then Photo Forums.

Once you feel comfortable with one type or area of photography, it's time to challenge yourself by trying something different. You're an avid landscape photographer? Try street photography. Love your wide-angle lens? Time to take aim at birds or flowers. Avoid flash like the plague? See what a flash or reflector can do for you. When you go back to your main interest, you will be surprised at how your photos have improved.

Exposure to art of all kinds can help to improve your eye for composition and balance. Visit the art galleries and museums this winter. You may not be looking at photographs, but you can still learn about colour and composition, perspective and balance, even when looking at sculpture or models or dioramas.

In the end, no matter how many books and magazines you read, how many videos or tutorials you watch, how many courses and workshops you take, or how much theory you learn, the real test comes when you have to put it into practice.

You may be a very knowledgeable "expert" and able to talk like a pro, but can you actually take good photographs? That part is an ongoing, never-ending process that requires practice, practice, and yet more practice. And with today's ever-changing technology, just as you think you've mastered one camera system or computer program, a new one appears with claims to be even better, so you have to start the whole process all over again!

by John Coenraads

In the photosphere, the glowing outer sheath of the sun, a photon is born. Its birth is preceded by hellish violence in the inner core of the sun where temperatures and pressures are so great that hydrogen atoms collapse and the very nuclei fuse together to form helium. It is this thermonuclear process, that has been going on for five billion years and will continue for another five billion, which is the source of the photon's energy. This photon, however, is not produced in the nucleus; it is generated by the dance of the electrons which enshroud a helium atom. It has a wavelength of 587 nm, a wavelength the human eye perceives as yellow. It is strange that a photon, a particle, should also have a wavelength; such is the nature of quantum weirdness. Although we see with photons, it is ironic that we can never "see" a photon. Figure 1 gives an artist's highly imaginative impression of a photon by representing it as a tiny wavelet.

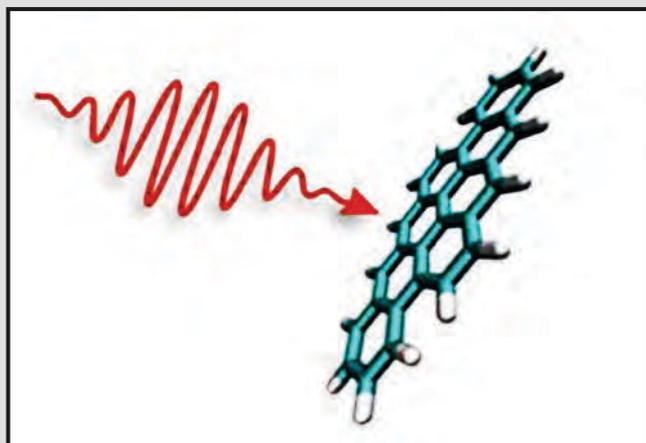


Figure 1: A photon, represented as a wavelet, approaching a molecule of matter with which it can interact in one of many different ways. (Source: FOM Institute AMOLF, Netherlands)

**The Long Flight:** Even travelling at the universe's ultimate speed limit of 300,000 km per second (the speed of light), it will still take our photon a little more than eight minutes to traverse the distance from sun to earth through the empty vacuum of space. As our photon approaches the earth, it passes through the earth's magnetic field but, fortunately for life on earth, its trajectory remains unaffected, unlike that of the charged particles such as protons making up the solar wind which are swept out of harm's way by the earth's "magnetic snow plough." As a photon enters the atmosphere, there is a distinct possibility that it will be scattered by water molecules and dust in the air. For a

blue photon the probability is fairly high, which is why the sky appears blue, but our yellow photon makes it through unscathed and strikes the breast feather of a Canada warbler, which, having just made the exhausting flight across Lake Ontario, is resting in a tree at Prince Edward Point National Wildlife Area near Picton, Ontario. Had the photon struck the bird's eye, it might have undergone specular reflection, where the angle of reflection is equal to the angle of incidence, leading to the creation of a highlight in the eye. But striking the yellow breast, the photon instead undergoes diffuse reflection where the photon randomly reflects at one of many possible angles. Although the reflection of a photon is often visualized as being as simple as that of a tennis ball bouncing off the surface of a court, the reality is more complicated. During reflection the photon is actually absorbed and then re-emitted by an atom in the bird's feathers. If the photon's colour had been other than yellow, it would have been absorbed, but not re-emitted. In this case the photon is lucky; the reflection sends it towards the 300 mm lens on a Canon 70D held by an eager photographer.

**The Camera:** Although the photon is now only a few centimetres from its target, its travails are not over. First it encounters a polarizing filter. Fortunately the wavelet comprising the photon is vertically oriented and matching the vertical orientation of the filter allows it to pass through easily. Had the orientations not matched, the photon would have been absorbed bringing its existence to a premature end. Next our photon encounters the first lens surface. Being glass, there is a small probability that the photon gets reflected. Should the photon start to reflect, it is coaxed back into the forward direction by a coating, one-quarter of a wavelength thick, that sets up constructive interference in the forward direction. The glass next causes the photon to refract (bend) thereby changing its trajectory so that it will land on the desired point in the camera's focal plane. The photon's path is tweaked several more times as it continues its flight through the remaining lens elements. Next, just in the nick of time, the camera's shutter opens allowing the photon to pass through. Had it not, the photon would have been absorbed yielding up its tiny packet of sun energy to the shutter curtain in the form of heat. There is no glory in such an end, and the information encoded by the photon, that there is a yellow bird out there, would have been lost. Next the photon encounters an infrared filter designed to absorb any wavelengths longer than that of red light. A yellow photon's wavelength is too short to be affected. Now the photon encounters two thin,

transparent slices of a doubly refracting material that, depending on the photon's polarization, causes the photon's path to shift slightly. This will actually result in a slight but deliberate blurring of the final image. That degrading the image in this way is desirable seems counterintuitive, but it avoids a problem caused by a lens that is "too sharp." A lens that can resolve detail finer than the sensor can resolve will cause the sensor to record strange and undesirable bands of colour (moiré patterns) through a process known as aliasing.

**The Sensor:** But now, as the photon is almost home, it encounters filters that only admit red, green or blue light; what is a yellow photon to do? Fortunately the filters are not very good filters and their response is such that they will each admit a fairly broad band of overlapping colours and a yellow photon has a good chance of passing through either a red or green filter, although the blue filter would definitely have stopped it. Let's say that as chance would have it, our photon passes through a red filter and gets recorded as such. What has happened to the information that it was a yellow photon? It would be lost were it not that for every yellow photon landing on a red filter a compatriot lands on and passes through an adjacent green filter. From this, one can later deduce that the light source (the bird's breast) was yellow. At last the photon gives up its precious packet of energy to a tiny electrical capacitor in the charge coupled device (CCD) forming the sensor. In doing so, a minuscule electrical charge is released and measured once the exposure has been completed. This measurement is stored as a binary number somewhere in the camera's memory card. The fact that somewhere in that memory card a binary digit (bit) now reads one instead of zero, means that this photon's life was not in vain, unlike that of the uncountable number of photons heading off into space condemned to travel the cold vacuum of space forever.

**The Projected Image:** So, when someone views the image, how is the yellow photon recreated? That depends. If the image is digitally projected or displayed on a computer or television screen, additive colour theory using red, green and blue light (RGB) applies. The bit recording the yellow photon as red causes the red pixel on a screen to glow just a bit brighter. We would see it as red were it not for the other yellow photons recorded as green. Together, the glowing red and green pixels, seen from a distance where the eye can no longer resolve them, will be seen as yellow. The reason is a property of the retina, not the brain. The retina with its cones sensitive to red, green and blue

works much like the camera sensor. The response of the red and green cones shows significant overlap and a yellow photon is equally likely to stimulate the red or green cones. To the retina this is indistinguishable from red and green cones being stimulated by actual red and green photons. The nerve impulses arriving at the brain being identical, the visual cortex says "yellow." I'm always amazed by the rich field of colours my mind's eye perceives when one considers the paucity of information coming from the retina.

**The Printed Image:** If the image is reproduced on paper using an ink jet printer or offset press, then the colour is created as in a painting and subtractive colour theory applies. The primary colours used in ink or paint are cyan (blue plus green with red missing), yellow (red plus green with blue missing) and magenta (red plus blue with green missing) and black - CYMK. I.e., the subtractive primaries work by absorbing photons within specific bands of colours. Thus to create red, magenta and yellow are layered on top of each other. The magenta absorbs green and the yellow absorbs blue leaving the red to be reflected by the white paper underneath. To create yellow, a yellow dye or pigment is used. When the image is viewed with a broad spectrum source such as sun light, not only are red and green photons reflected but so also are any yellow photons that may be present. And thus our yellow photon lives again!



*Figure 2: The brilliant yellow of a Canada warbler is a welcome sight in May. (Photo: Courtesy Linda Baker)*

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