Monthly Newsletter of the French Stereoscopic Club
1032 – June 2020

Editorial:

The variety of subjects in this issue of the French Stereo Club newsletter is outstanding, among which the continuation, by Pierre Meindre and JackDesBwa, of a debate, started last May, on parallel vs convergence in stereo shooting. Hopefully their theoretical considerations will provide more insights to stereo practitioners.

As editor and animator of the dedicated working group, J.-Yves presents the new online version of our Glossary. There you will find key updates and additions related to the theories of vision, natural or stereoscopic , stereopsy and stereoscopic techniques.

Laurent Doldi and Pierre Saint-Ellier present their advanced methods and techniques for the reproduction of anaglyphs. Their books compete in convenience and quality with the stereoscopic vision you can get from projected images or from stereo pairs seen through a stereoscope.

José Stark explains the problem of deformations caused by prismatic lenses. His research highlights the significant differences when various observers perceive these distortions - some do not perceive them at all - and the relativity of geometric considerations in cerebral perception.

Following the outstanding production of stereoscopic views of the SARS-CoV-2 genome by Pierre Meindre in the last issue, I outline how biochemistry makes use of 3D representations at the molecular level.

Among all these high-level theoretical considerations, Christian Augier, Jean-Yves Gresser, Pierre Meindre and Thierry Mercier take us back to Earth by presenting us a selection of beautiful stereoscopic images.

This issue will be of interest to experienced stereoscopists, but the Stereo Club should not forget its main purpose: to bring together all those interested in 3D images and stereoscopy, especially beginners who seek clear guidance and advices.

With our members from regional groups, they should be the main recipient of the videoconference program to be set up at the end of this summer or at the beginning of this autumn. Please do not hesitate to contact me for suggestions or proposals regarding this program at patrick.demaret.92@gmail.com.

Patrick Demaret

Chairman of the French Stereo Club

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Example of (very) high convergence cameras for industrial applications. There are no human eyes behind these devices but software which corrects the images, analyses the differences which result will be a 3D representation of the scene.	*6*
Homologous points used in the calculation.	
Example of an area (on the left of the test images) with a strong vertical alignment defect (to be seen without glasses). The zoom accentuates the phenomenon, but the error of a few pixels that this represents on the original still seems very large, compared to what a correct alignment can produce; scaled, although detectable, this defect is not particularly troublesome.	*7*
Examples of simple transformations. Top-left: original; Top-right: linear transformation (3 × 3 matrix) combining several basic operations; Bottom-left: polynomial (quadratic) deformation used to correct the classic barrel defect of an objective; Bottom-right: Different linear manipulation per channel (translation) simulating a classic chromatic though exaggerated aberration.	*8*
When taking the right image of each pair, if there has been a displacement of the pupil, we have a new stereoscopic pair with a very small base (image 2 being on the left here). With such a small base, you have to zoom in oder to see a disparity, provided objects, the tripod and the building in the background, are sufficiently apart. It is tiny, but visible.	*10*

By placing the enlargements of the previous illustration one below the other, and aligning the tripod (green correspondences), we see that the background is slightly offset (orange correspondences, with more clear correspondences that would be expected if there were alignment). In comparing with other elements (out of this sample due to space), it is possible to see that this is not due to an accidental general distortion of the image. This gap is due to the depth and thus to the approximation of the pupils. 11

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Ruins in Jerusalem (Olivier Cahen)

Near the Karnak temple, Egypt (Olivier Cahen)

Sphinx alley, Louvre museum, Paris (René Le Menn)

Romanesque marquee, Anzy-le-Duc church, Saône-et-Loire (Thierry Mercier) 20

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Toulouse in 3D, Saumur in 3D.

Ophrys bee (François Lagarde)

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A sophisticated ceviche served at the fairly chic restaurant "Pea", Hanga Roa harbour, Easter Island, Chile (Pierre Meindre)

A more "proletarian" ceviche at the little restaurant "Emily" on Iquique harbour, a town in northern Chile (Pierre Meindre)

At the central Escobedo market in Santiago de Querétaro, Mexico, there were many marisquerías (seafood restaurants). I chose this one for its name: El Tiburón Enamorado (the loving shark!) (Pierre Meindre) 25

A hearty and tasty "vuelve a la vida" with crackers, Santiago de Querétaro, Mexico, Marisquería El Tiburón Enamorado (Pierre Meindre)

A "Vuelve a la vida" served at Marisquería Pancho's, Hidalgo market, Guanajuato, Mexico (Pierre Meindre)

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3D representation of the coronavirus genome using Molmil software.

Answer to the front page riddle.

Shops and covered walkway, Royal Palace, Paris, May 24, 2020 around 9:30 a.m. (Jean-Yves Gresser with a Fujifilm W3)