1. Eloisa and Joaquim Callén, *Mineral Up*.

2. Gail Spann (*left*) with Christi Cramer and Wendel Wilson, *Mineralogical Record*.

3. Kristina Bode, *Mineralien Welt*, Germany.

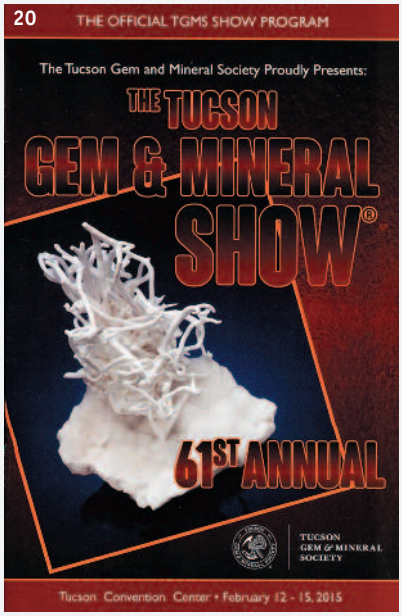
4. *Vasconcelos Minerals* team (*left to right*): Fabiano, Frederico, and Lucas de Vasconcelos.

5. John Veevaert (*Trinity Minerals*) and Marcus J. Origlieri (*Mineral Zone*).

6. Scott Werschky (*Miner's Lunchbox*).

7. Jeff Scovil (*right*) and Mustafa Ghulam (*Fine Art Minerals*).

THE 2015 TUCSON MINERAL AND GEM SHOW



20. Poster of TGMS-2015.

Photo: M.B. Leybov, if not mentioned other.

8. (*left to right*): Mark Mauthner, Tracy Warmington, Theresa Smith, and Kevin Czaja.

9. Raquel Alonso-Perez (Harvard Mineralogical and Geological Museum).

10. Tobias Weise (*LAPIS Verlag*).

11. Don Lum, collector

12. Ian Bruce (*Crystal Classics*, UK) and Jolyon Ralph (*mindat.org*) with son Roma.

13. Adam Wright (*Adelaide Mining*).

14. Edward Rosenzweig (*Edwards Minerals*).

15. Bryan Lees (*Collector's Edge Minerals*) with customer.

16. Tim Dorris (*Pinnacle 5 Minerals*), Monica Kitt (*Arkenstone*), Jon Voelter (*Voelter Minerals*) and Evan Jones (*Unique Minerals*).

17. Jordi Fabre (*Fabre Minerals*).

18. At the Lecture at the Pueblo Gem and Mineral Show.

19. Monika and Herbert Obodda (*left*) and Erika and Harold Van Pelt.

21. Open ceremony of the TGMS-2015.

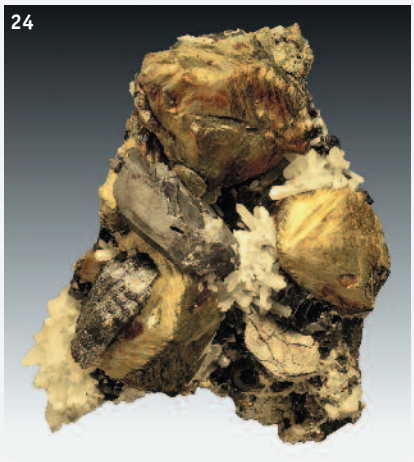
Tucson is very diverse. Here is a place for anything related to minerals and rocks. As yet nobody has succeeded in providing an exhaustive description of this international festival of minerals. Indeed, nobody has taken risk. Our account of the exhibition is devoted exclusively to its mineralogical part. Sure, it is fragmentary and subjective and does not aspire to provide a complete account. The reader will see the show from the perspectives of independent authors: Peter Lyckberg, an well-known collector from Sweden, and Inna Lykova, a young mineralogist from Russia. Mark Mauthner, Renate Schumacher, Debra Wilson, and Leslie Moclock talk about their exhibitions at the Main Tucson Show. We hope that this international team will provide insight into the show and reveal what they thought were the most fascinating aspects of the exhibition.

1. Editor's Notes

The 2015 Tucson Show resembles a healthy, viable and fast evolving organism. It seems that the market for mineral specimens is at its peak. So it undoubtedly seems when you observe the crowds simmering next to mineral displays and buying collectable specimens despite the rapid price rise. The latter is especially true for high quality specimens.

The reason for the price rise is simple: there are more and more collectors who wish and are able to purchase first-rate specimens, whereas the number of these specimens is extremely limited. The very fact of the emergence of a new wave of affluent collectors is a good sign. Whatever their motivations, be it a genuine interest in minerals or investment, the end result is positive in a variety of aspects. We think it is most important that they retain these beautiful, perfect and unique masterpieces of nature for humankind. Sooner or later, or perhaps many years later, these specimens will come to light and become available to the public. Many high profile collectors have made no secret of their collections and welcome anyone interested. Amongst

22. **Topaz** crystals cluster with **lepidolite** (up to 21 cm). Volodarsk-Volynskii, Ukraine. Finds of 2014. Specimen: *Green Mountains*.
23. **Corundum** (var. ruby). 15 x 12 cm (crystal size is 5.5 x 5.5 cm). Rai-Iz, Polar Urals, Russia. Specimen: *Ausrox*.
24. **Chalcopyrite** with **galena**, **sphalerite** and **quartz**. 9 x 7.5 cm. Nikolaevskii Mine, Dalnegorsk, Primorskii Krai, Russia.
25. **Rubellite**. 15 cm. Cruzeiro Mine, Sao Jose da Safira, Doce Valley, Minas Gerais, Brazil. Specimen: *Vasconcelos*.
26. **Beryl**. 5 x 4 cm. Deo Darrah, Khash & Kura Wa, Munjan District, Badakshan Province, Afghanistan. Specimen: *Fine Art Minerals*.



27. 'Thor's Hammer' – **Pyrite** with marcasite. 33 x 32 cm. Ross Co., Ohio, USA. Specimen: *Sunnywood*.
28. "The Crown of Paprok" **Elbaite** with Smoky Quartz. 18 x 25.4 cm. Paprok, Nuristan Prov., Afghanistan. Specimen: *Rocksaholics*.
29. 'Thunderbolt' **Gold**. 50 cm, 3.6 kg. Mt. Monger, Kalgoorlie, Australia, 2014. Specimen and photo: *Arkenstone*.
30. **Titanite**. 2 cm. Saranovskoye, Perm Krai, Russia. Specimen: S. Baskakov.
31. **Quartz** (var. amethyst). 7.3 x 2.2 cm. Copper Hill Mine, Belstone, Okehampton Area, Devon, England, UK. Specimen: *Edwards Minerals*.
32. **Stephanite**. 1.5 x 1 cm. Freiberg Dist, Erzgebirge, Saxony, Germany. Specimen: *Edwards Minerals*.

2. Collector's Notes

To put a little perspective to the quality of mineral specimens offered, dealers inventory and displays as well as the beautiful exhibits at TGMS I shall start with a few comparisons to my first Tucson Show in 1989.

Being my first visit in 1989 I and a friend stayed at *Oasis* Motel in N. Oracle, a not recommended place since the street and neighborhood was highly questionable to visit at night. How little did we know! We packed our 8 drums to be shipped home right in front of our motel room in the open. Perhaps they were too heavy to carry away by the passing by street people but I think we were lucky.

The finest specimens I found available that year were bought in fact before the show. I got one absolute world class specimen, the *Himalaya Princess* found in July 1988. It is an incredibly pristine floater consisting of a single red-green-red flattened elbaite (tourmaline) on a little matrix of an etched feldspar crystal decorated with a few cleavelandite blades at the base of the tourmaline and a couple of small quartz crystals. Another one was a very fine blue cap tourmaline from the 1971–72 find at the Tourmaline Queen Mine, both in San Diego County, California, USA. But no such high quality specimen were seen or known to be available in Tucson 1989. Nothing even close to them!

Another 25 very fine specimens all brought home in the hand luggage. Among those specimens was an almost meter long gypsum crystals from Mexico protected by plastic and my down jacket. In those days there was no problem at all to bring minerals in carry on in air-plan.

There were plenty of nice minerals to be had for little money but really fine to exceptional minerals were very scarce.

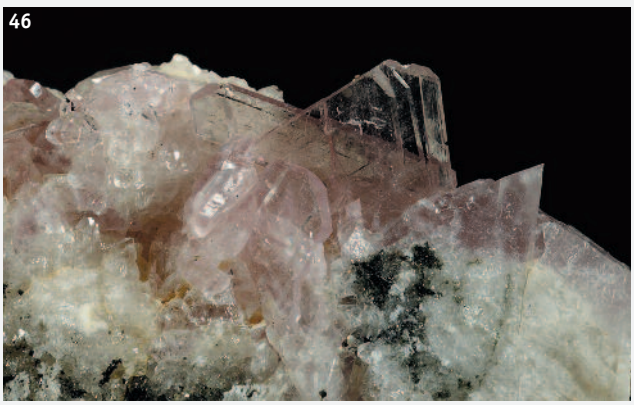
I have said it for decades, we live in the Mineralogical GOLDEN AGES. What about prices, this and that sold for 2 and 5 million dollars. Yes, so what. A yacht sold for 150 million dollars, a car for 2 millon, a painting for 300 million... That has nothing to do with most of us! The best minerals are still inexpensive in comparison to art.

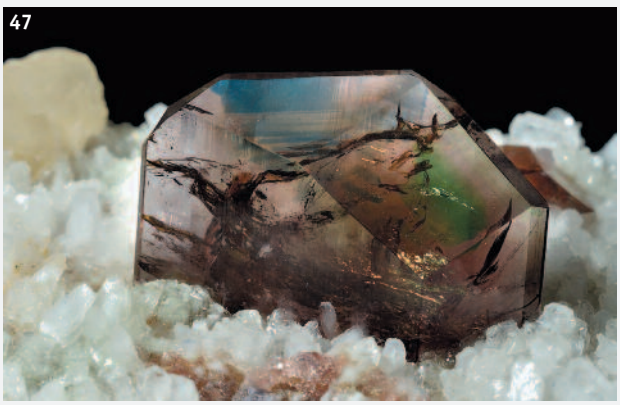
44. **Goethite**. 6 x 3.4 cm. Volodarsk-Volynskii , Zhytomyr Oblast', Ukraine. Specimen: *Russian Minerals*.

45. **Cerussite**. 13 x 9 cm. Rubtsovskoe deposit, Altai, Altaiskii Krai, Russia. Specimen: *Russian Minerals*.

46. **Reedmergnerite*** FOV 4 x 3 cm. Tatara Mine, Tatara, Khyber Agency, KPK Prov., Pakistan. Specimen: Jean Claude Leydet.

47. **Axinite** multicolor crystal (2 cm high) on matrix. Tormiq Valley, Haramosh Mts., Skardu, Pakistan. Specimen: *Fine Art Minerals*.





* derermination of reedmergnerite is under question *(Notes of Editor)*.

52. Exposition ***"The Masterpieces of Eastern Europe from the Fersman Mineralogical Museum"***, at TGMS show (series of paintings – oil, canvas – by Vladimir L. Shcherbina. *Project Curators:* V.K. Garanin, A.A. Evseev and M.Ye. Generalov, Fersman Mineralogical Museum, RAS and L.A. Cheshko, *Mineralogical Almanac*.

east (Which is really way into Eastern Europe!) but Ukraine had been incorporated in the TGMS Show map of Western Europe. The Spanns had further a large specimen of the more flat bladed stibnite from the French locality of Lubilhac, Haute-Loire, Massif Central, Auvergne (France).

There were several exhibits showing N. England specimens among them one display from Rogerley Mine Fluorites where the brave team keep mining in the 2015 season!

Peter Davidson from National Museums of Scotland had brought an extraordinary display of the finest specimens from mines near Strontian village (Sunart, Lochaber, Highland, Scotland), devoted to 225-year anniversary of element strontium discovery. Mineralogical Almanac plans to publish P. Davidson's article on the occasion in the next issue (MA vol. 21-1).

Tom Moore, editor at the *Mineralogical Record* was showing a large suite of his thumbnails, these all from Europe. A very fine suite of interesting specimens including uvarovite on matrix from Outokumpu (Finland), gadolinite from Iveland (Norway), malachite pseudomorph of cuprite from Chessy (near Lyon, France), a Dry Gill Mine (Cumbria, England) red mimetite on matrix, and so on.

Mineral dealers Wolfgand and Karin Wendel from SW Germany had put in a display of many fine German classical minerals including silver, native bismuth as well as other classic W. European specimens.

Gene Meirean exhibited a case with amethysts from geodes, some of remarkable shape or with very fine white calcite crystals of various morphologies, some of the best reminding of old classic Cumbrian calcites.

We have to congratulate Barry Kitt, a rather new Texas collector for having put in the finest display case for Desautels Competition where 20 cabinet or large cabinet specimens of all colors could be adored.

One case was featuring some newly found January 4, 2015! Rowley Mine (Arizona) wulfenites. Crystals were deep orange to golden orange. Rowley produces very fine gem quality thin tabular crystals typically to a cm or so.

Vlad Klipov (R&D XTALS, Inc), a Russian scientist living in Cleaveland, Ohio, has produced some very fine specimens of quartz. He has also repaired previously damaged quartz specimens by growing new terminations on them as well as on amethyst. He is selling them with full clarity that these are man made and they make very interesting specimens for study and reference. He even had grown V twin and Japan-law twinned quartz!

One of the most magnificent specimens in Tucson 2015, and I have been grateful to see it before is a rhodochrosite *Gennie* of fine red color, coming out of its box consisting of a pyrite matrix. The pyrite is only 2 cm while the *Gennie* is widing itself out of its locker first to the right for 5 cm them twisting to the left and getting thicker while passing the matrix below and ending with a ball. The shape of a compressed C from behind (i.e. mirror image). It is in the Gail and Jim Spann collection. Locality is given as Potosi Mine, Aquiles Serdan, Santa Eulalia Mining District, Chihuahua, Mexico. A very impressive deep red botryoidal rhodochrosite from the Oppu Mine, Aomori Prefecture, Japan, approximately 15 cm by 10 cm and dozens ball like aggregates to a centimeter or more growing on a base of pyrite which was shining between the rhodochrosites. The finest such I have seen.

Already at Tucson 2015 we saw some superb blue minerals including a large group of superb azurite crystals from Chessy, Lyon (France) and of course also British Liroconite impossible to resist.

Peter Lyckberg, lyckbergs@gmail.com, collector, Sweden

3. Expositions at the 2015 Tucson Mineral and Gem Show

"Minerals of Western Europe" was the theme of the Tucson Main show this year. Museums and private collectors from all over the world brought their expositions with specimens from the classic European localities.

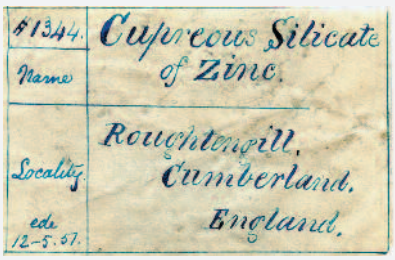
Most of the participants did not think twice about the border between Western and Eastern Europe. So, the overall coverage of the countries was broad as a result. Without attempting to undertake the impossible task of providing a systematic and complete coverage of the topic, so restricted by the exhibition's small-scale format, the participants have nevertheless delighted the visitors with a few successful displays.

Carnegie Natural History Museum located in Pittsburgh suburbs, Pennsylvania, US, has exhibited specimens from the collection of William W. Jefferis (1820–1906), a naturalist and outstanding 19th century minerals collector. Amongst these are the 19th century classics: Baveno twin of orthoclase from Italy collected in 1887; a small tight cluster of rhombohedral calcite crystals with numerous sand inclusions from the vicinity of Fontainebleau, France (1864); and a sky blue Cu-bearing hemimorphite from Roughtengill, Cumbria, England (1851) (for more detailed exhibition description see Debra Wilson, pp. 76–79 of this issue).

The London's Natural History Museum exhibition displayed specimens from the collection of Frederick Noel Ashcroft (1878–1949), who specialised in zeolites and Swiss minerals, predominantly from Alpine-type veins. The specimens from this most known part of his collection were displayed at the show: a wonderful cluster of spear twins of yellow-green titanite on chlorite base from Druntobel; crystals of cafarsite on rock from Kollergraben; orange-brown anatase crystal (2 cm) on rock from Binn Valley; and finally a large jordanite crystal, almost 5 cm in size with pronounced polysynthetic twinning from Lengenbach.

53. Cuprian **hemimorphite**. 10.8 cm wide. Roughton Gill, Cumbria, England. 1851. CM#4502.

54. **Orthoclase** (Baveno Twins). 8.4 cm tall. Baveno, Piedmont, Italy. 1887. CM#5091.



4. Exposition on Erzberg Locality (Styria, Austria)

The details of Erzberg's early mining history are nebulous. The date, 712 CE, has long been considered the founding date of iron mining at Erzberg, but this is based on a legendary, and very likely misinterpreted, inscription in the St. Oswald church in Eisenerz. Archeological evidence from studies in the 1900's indicates that the area's mining history actually started with copper mining and smelting in the Bronze Age, about the 12th century BC. However, it was Slavic people that began to work the softer, weathered surface deposits for iron in the late first millennium. The earliest documented mention of iron mining here is dated 1171, and until very recently, mining has continued almost uninterruptedly since then.

Erzberg is the largest iron ore open pit mine in central Europe and the orebody represents the largest deposit of siderite in the world. Besides siderite, the main ore, iron is also won from ankerite – of which Erzberg is the first recorded locality – and ferroan dolomite.

Erzberg is also the "type locality" of the aragonite variety *flos ferri*. The Latin name dates from its listing in Linnaeus' 1768 *Systema Naturae*. It means "iron flower", as does the German name Eisenblüte. The name, of course, does not refer to its composition, but its origin in the iron mine. Aragonite also occurs at Erzberg as branching bunches of acicular crystals and as cave pearls.

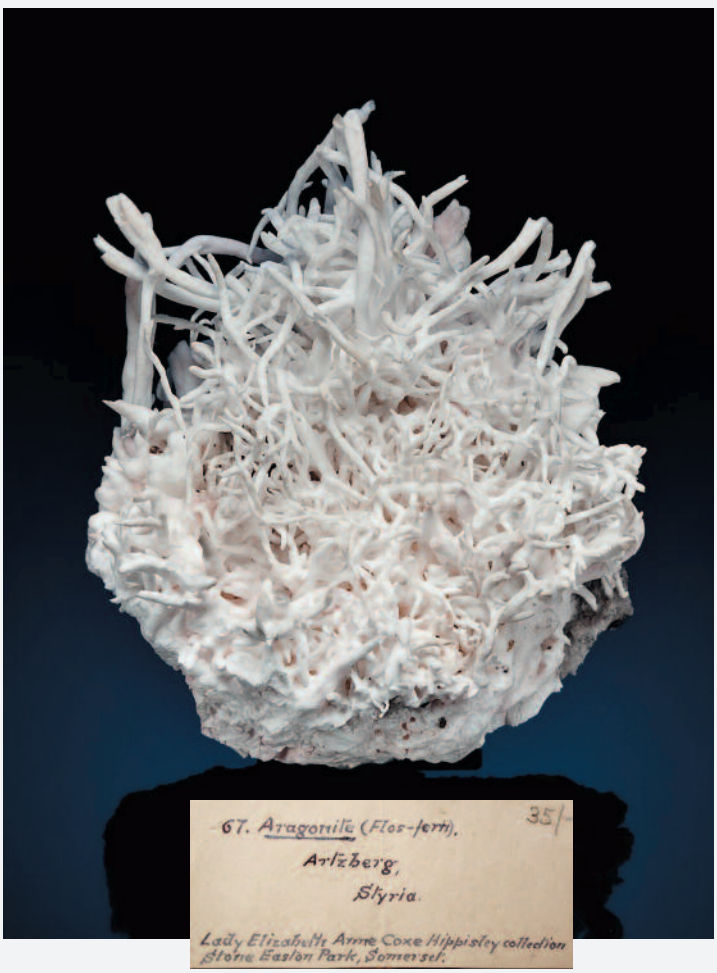
MinDat.org lists 56 minerals, of which 41 are IMA approved species, as occurring at Erzberg. Most famous, of course, are the aragonite specimens, particularly the *flos ferri*, and ankerite. The mine also produced a number of fine specimens of cinnabar, dolomite and quartz. Most of the rest are targets for die-hard species or locality oriented collectors.

Despite the mine's fame, size and history, it is oddly difficult to find specimens on the market. They do pop up once in a while, fortunately.

Mark Mauthner,
mmauthner@gmail.com

62. *Erzberg* Exposition at the TGMS Show. Photo: M. Mauthner.

63. **Aragonite** (*flos ferri*). 11.5 cm tall. Erzberg, Eisenerz, Styria, Austria. Private collection. Photo: M. Mauthner.



64. **Aragonite** (*flos ferri*) with old label. 8.5 cm. Erzberg, Eisenerz, Styria, Austria. Private collection. Ex Lady Elizabeth Anne Hippisley Coxe collection. Label handwritten by Sir Arthur Russell. Lady Elizabeth Anne Hippisley Coxe was a collector that lived in the late 18th to early 19th century. Photo: M. Mauthner.

5. European Classics from the William W. Jefferis Collection

The theme for the 2015 Tucson Gem & Mineral Show, *Minerals of Western Europe*, gave us an opportunity to highlight minerals from classic European localities that showed a sort of "time capsule" of minerals from the historic collection of William W. Jefferis, who was actively collecting mineral specimens from 1837 to 1900. Andrew Carnegie purchased the Jefferis collection and donated it to his new Carnegie Institute's Museum of Natural History in 1904. Jefferis (1820–1906) was a gentleman naturalist from West Chester, Pennsylvania. He was a contemporary of James Dwight Dana and George Brush, both of Yale University, and collaborated by providing specimens for analyses and information on species and localities that were included in Dana's textbooks and systematic classification of mineral species. Other noted collectors of that period were Charles Spang (1809–1904) and William Vaux (1811–1882), and relative latecomers Washington Roebling (1837–1926), Norman Spang (1843–1922), Clarence Bement (1843–1923), and George Vaux (1863–1927), some of which Jefferis corresponded or traded with. The Jefferis collection of about 12,000 specimens was considered to be one of the most important of his era. His collection was world-wide in scope, but he specialized in specimens from Pennsylvania and adjacent areas of northeastern U.S. and southeastern Canada, and in specimens from England, most of which he acquired from noted English mineral dealers Bryce McMurdo Wright, both Sr. and Jr. He also acquired many European specimens from German dealers Theodor Schuchardt and Dr. August Krantz.

The Carnegie 2015 Tucson exhibit (Fig. 65) featured European specimens from the Jefferis collection, each was displayed with its original Jefferis label and each included the date on which Jefferis added it to his collection. Classic localities were represented with specimens such as the Baveno twinned orthoclase from Baveno, Italy (Fig. 54); and the zinnwaldite from what was then known as Zinnwald, Bohemia (Fig. 74). There were also specimens from classic localities that are best known for other mineral species such as the quartz and clinochlore from Kongsberg, Norway (Fig. 69) which is best known for its silver specimens; and the gypsum variety selenite from Switzerland (Fig. 77) which is best known for specimens of smoky quartz, fluorite, etc. Another specimen from the Jefferis collection was featured in the Carnegie Mineralogical Award case, a calcite from St. Andreasburg, Germany that Jefferis added to his collection in 1893 (Fig. 79).

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Not only did the specimens show what minerals were available during that time period, but the old Jefferis labels themselves told another story about the terminology used to describe minerals during that era. Take, for example the coronadite and plumbogummite on mimetite from Cumbria, England (Fig. 67). The original Jefferis label describes this specimen as *"Arsenio-phosphate of Lead with Manganese. Calbeck Fells. Cumberland. England"*, showing the emphasis on chemistry in the classification of minerals in the 19th century. (X-Ray Diffraction analysis showed that the "manganese" is coronadite). Other examples of Jefferis' era terminology would be the specimen of cuprian hemimorphite from Roughton Gill, Cumbria, England (Fig. 53) that the old label describes as *"Cupreous Silicate of Zinc. Roughtengil. Cumberland. England"*; the zinnwaldite from Cinovec, Bohemia, Czech Republic (Fig. 74) designated as *"Lithia Mica. Zinnwald. Bohemia"* on the old label; or the sand calcite from Fontainebleau, France (Fig. 80) that Jefferis lists as *"Pseudomorphous Sand-stone. Fontainbleau. France."*

Shown here is the display as it was exhibited at the 2015 Tucson Gem & Mineral Show (Fig. 65) and images of the individual specimens, along with their corresponding Jefferis labels and the date he acquired each of them (Figs. 53–54 & 66–80). All photographs are by the author.

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