THIS IS...

Johan Pot

Last fall I was lucky enough to be able to visit Namibia. The animals there are particularly interesting in their natural habitats. Amateur photographers can go completely crazy there. Take a look at Figures 1 and 2.

You probably thought in Figure 1: "This is a giraffe" and in Figure 2: "This is a lion." If that is the case, we agree.

You have probably decided on these names in a fraction of a second. You identified intuitively , so to speak.

What do you think of Figure 3? I expect you will say, "This is a cat."

How did you decide that? I admit that I really have no idea. Karl Fickenscher once suggested that this had to do with the pointed ears. So you only needed one characteristic for identification. Isn't it wonderful that you can determine the type of animal in almost no time? This ability may have been vital in the past. Whoever meets a lion in the wild does not necessarily have to determine from the characteristics in a book that it is best to flee in a hurry.

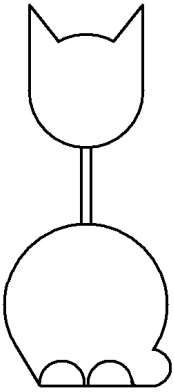

Fig. 3

I was once in the city. Suddenly I saw an old friend in front of me amongst the pedestrians. I saw a completely unknown face. I was quite embarrassed. What went wrong with my identification? The automatic passport control at the airport takes several seconds, maybe half a minute. There is probably no intuitive de-

Fig. 1

Fig. 2

Fig. 4 Weingartia (Sulcorebutia) tiraquensis MC5493

tection, but another method is used.
By the way, are a cat's ears really pointed?

In 1988 Kik and I were at Monte Punco, Bolivia. *Sulcorebutia tiraquensis* (Fig. 4) is found here. Albert Buining (1975) wrote that it was actually too difficult a task for a man of 73 years to climb the 2950 m mountain, but he still managed it.
Kik and I were much younger. We embarked on this task in optimistic mood. It went higher and higher, but no cactus was found at all. We gradually realized that we were not on Albert Buining's mountain. We finally discovered plants at 3200 m. They were beautiful, but we asked ourselves: "Is this really Sulcorebutia tiraquensis?" (Fig. 5).
Leo van der Hoeven reportedly found this plant south of the Cochabamba-Santa Cruz asphalt road. It's not on the Buining mountain, but we decided to take a look anyway. We

Fig. 5 Weingartia (Sulcorebutia) tiraquensis? JK018

Fig. 6 Weingartia (Sulcorebutia) spec. nova? JK020

were really amazed to find the plants from Fig. 6. I believed: "But this is not Sulcorebutia tiraquensis." Kik even said, "This is something new." We soon fantasized about a Sulcorebutia brederooiana, in honor of our cactus friend Nol Brederoo.

After 3 kilometers towards Epizana we stopped again. Immediately next to the road I almost stumbled across the plant of Fig. 7. Had we found something new again?

When I got home I asked Rudolf Oeser and Willi Gertel. Oeser said that the JK022 was not a Sulcorebutia because "there aren't any such large Sulco's at all." This view was interesting in itself, because Oeser was using a feature to support his

Fig. 7 Weingartia (Sulcorebutia) tiraquensis JK022

Fig. 8 Weingartia (Sulcorebutia) JK020 over 30 years of age

view.

Gertel disagreed: “This is a typical tiraquensis. There is nothing more typical! ” This statement was also interesting. If it were correct, the plant of Fig. 4 would have been untypical for Kik and me, although it came from the collection of Cardenas.

Another consequence is that the Sulcorebutia tiraquensis apparently has multiple appearances. Can you still recognize this species intuitively , in the same way as we decide we see a giraffe or a lion?

The amazing answer is "Yes." You can keep different patterns in mind, which you still give the same name. Very committed experts may sometimes have more than 10 patterns per species. It is therefore not surprising that two such experts cannot communicate with each other if they refer to different patterns.

In 1990 I was invited to the Sulcorebutia Circle of Friends. In a lecture I presented the plants with field number JK020. Karl Augustin stated resolutely: “This is something new. That has to be described. ” Apparently everyone present agreed. Who would doubt a *Sulcorebutia brederooiana*?

At that time, however, I had already decided that JK020 is clearly a tiraquensis. How so? Quite simply: what else should it be if it is found in the *Tiraquensis* area? No one ever questioned me on this decision. And with that there was again a new appearance for the species *Sulcorebutia tiraquensis*. (Fig. 8 and Fig. 9)

So what is *Sulcorebutia tiraquensis*? A plant that originally comes from the *Tiraquensis* area

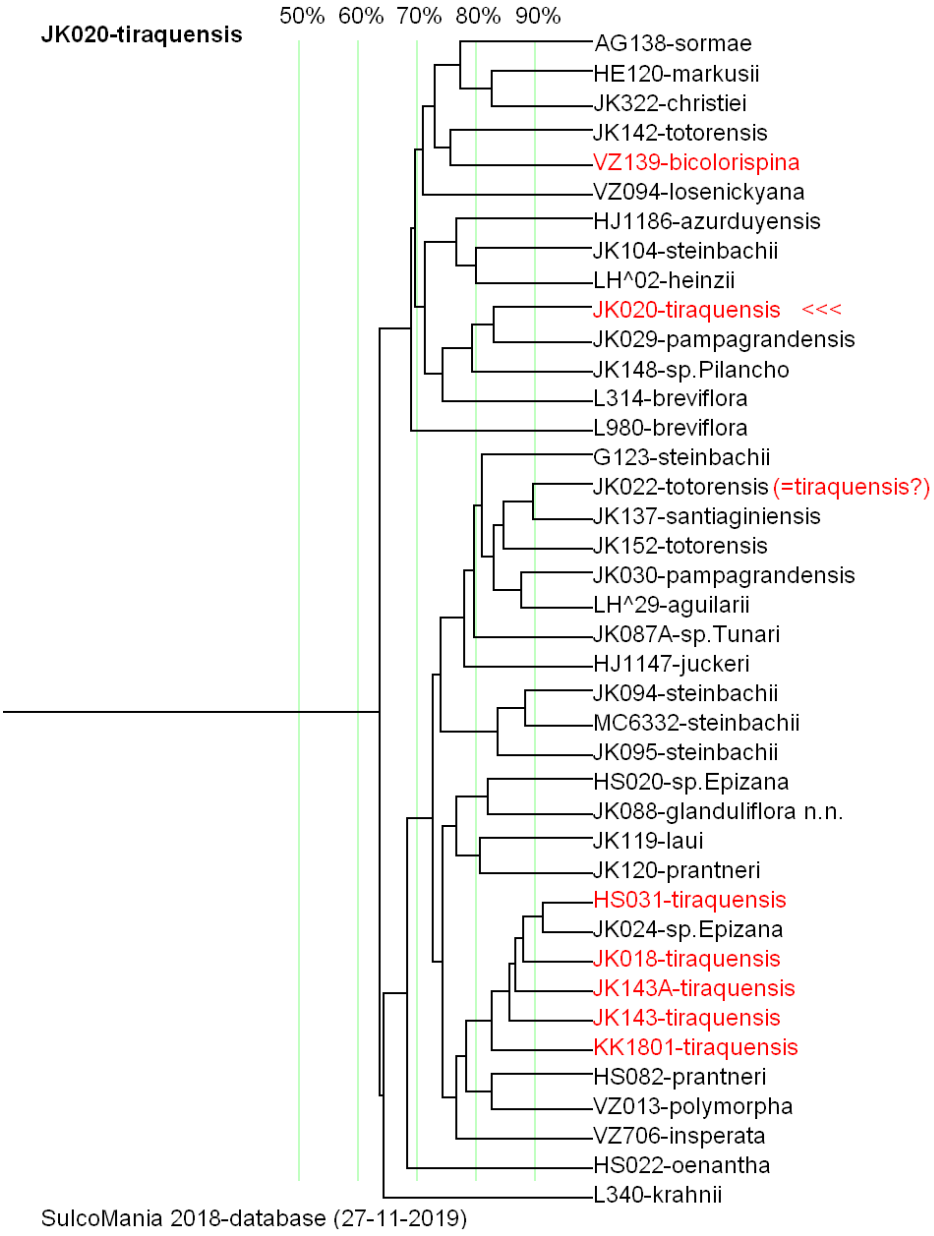

Fig. 9 Cladogram according to similarities in 33 characteristics with JK020 as reference plant

and does not deviate from the type plant within certain limits. How are these limits determined? They depend on the experience and the perception of the identifying person. And how is the area defined? There is no easier way: the area where *Sulcorebutia tiraquensis* is found.
Can I now use characteristics of this undescribed *S. brederooiana* (= *S. tiraquensis*) to emend the description of *S. tiraquensis*? Perhaps it is reasonable to reject this proposal.

In 1971 Martin Cárdenas described *Weingartia torotorensis*. He had probably intuitively identified a weingartia in the way we recognized the animals in Figures 1 and 2. Cárdenas did not accept the genus *Sulcorebutia*.
Fred H. Brandt (1977) housed the sulcorebutia's in the genus *Weingartia*. He wrote: "I note the connection to the name *Sulcorebutia* that has developed over 25 years, by placing the genus *Sulcorebutia* as a subgenus in the genus *Weingartia*." Did Brandt consider cactus collectors to be conservative? It seemed to me that he didn't have many supporters.
Instead, serious cactus lovers wondered how to separate *Weingartia* and *Sulcorebutia*. After Nol Brederoo had dealt with flower sections, an article by Brederoo and Donald (1981) appeared. They enthusiastically reported: "A problem has been solved!" Brederoo had discovered small hairs behind the scales on the ovary of sulcorebutia's, which were not to be found in weingartia's. A formal new combination of *Weingartia torotorensis* and *W. purpurea* followed in *Sulcorebutia torotorensis* and *S. purpurea*.
Unfortunately, soon after the publication it became clear that there are sometimes hairs in plants that were spontaneously included in *Weingartia*, as well as the lack of hairs in plants that were often called sulcorebutia's. What now? The characteristic was no longer used.
But the recombination has not been reversed in practice. Perhaps Sulcorebutians placed more emphasis on feeling good than on characteristics?

In 1999 David Hunt published the second edition of the *CITES Cactaceae Checklist*. The genera *Weingartia* and *Sulcorebutia* were not recognized. I still remember a meeting with very excited *Echinopseenfreunde* in Ruhla. Karl Fickenscher said that scolding is useless. Instead, you should supply evidence to support your objections. The room became remarkably quiet. After that, I never heard anything positive about Hunt's view in the circles of Ruhla.

Fig. 10 Weingartia (Sulcorebutia) vizcarrae var. laui JK118

Rudolf Oeser and Gerd Köllner (2000) published a contribution to house plants like *S. torotorensis* in a subgenus *Cumingia* of *Weingartia*. The authors believed that although *Cuminiga* was proposed by Donald (1980), it was not validly described. I could not find any enthusiasm for this view among other cactus lovers. You just found: "*Torotorensis* is a Sulcorebutia."

The publications by Christiane Ritz (2007) as well as by Karl Augustin and Günter Hentzschel (2008) made it clear that *Sulcorebutia* could not be properly separated from *Weingartia*. Willi Gertel and Johan de Vries (2009) also accepted this view. However, they wished to distinguish three subgenera, *Weingartia*, *Cumingia* and *Sulcorebutia*. The authors said that *Cumingia*, according to Dr. Urs Eggli was described validly. This is surprising to me, because Donald (1986) published *Sulcorebutia vizcarrae* var. *laui* six years after his suggestion. In this article he compared the new variety with *Sulcorebutia torotorensis*, but not with *Cumingia torotorensis*.

In this context, S. vizcarrae var. *laui* is interesting. In Fig.11 it has two different appearances in a cladogram due to the morphological similarity of 33 characteristics.
40 records from 818 were automatically selected with JK118 as reference plant. In this dendrogram from *S. vizcarrae* var. *laui* you will

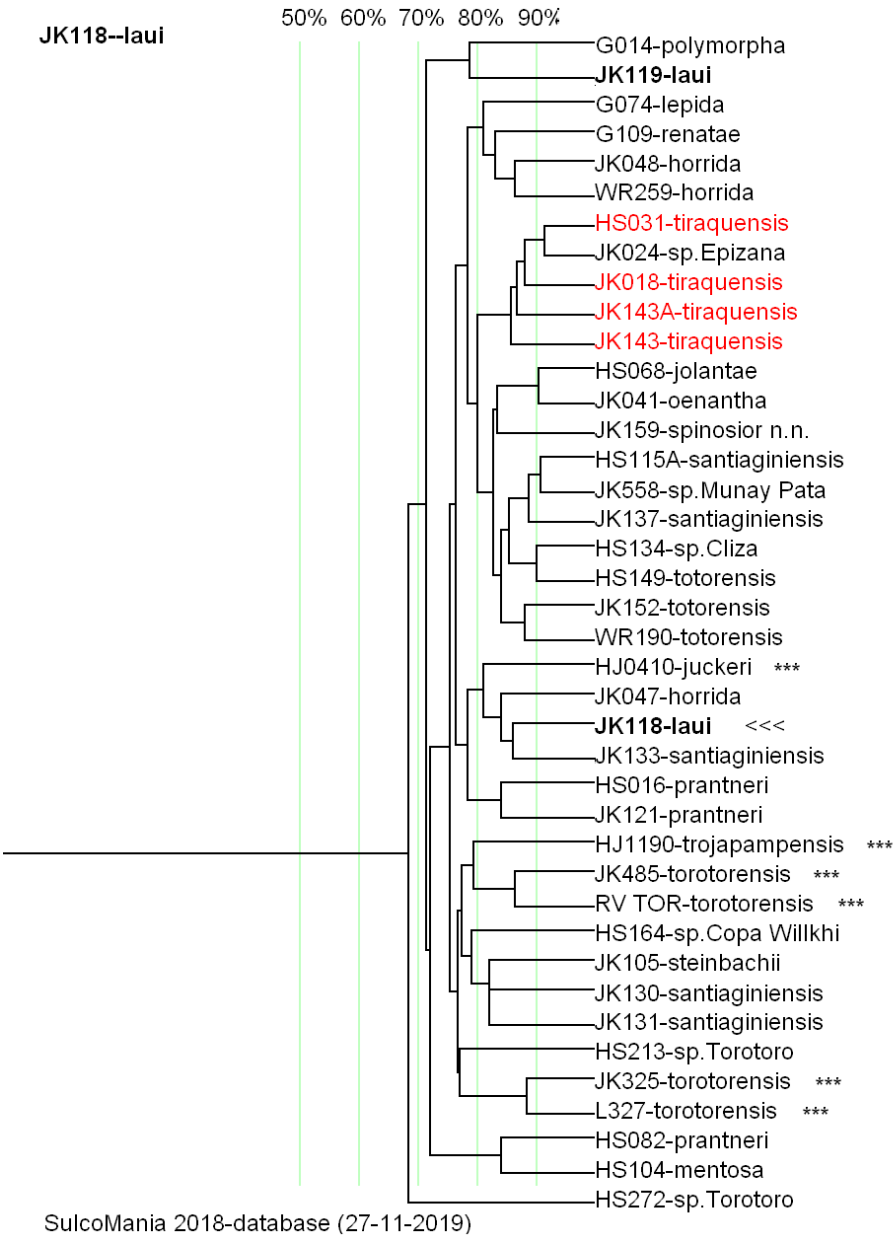

Fig. 11 Cladogram according to similarities in 31 characteristics with JK118 as reference plant

also find *S. torotorensis*, *S. tiraquensis*, *S. juckeri*, S. trojapampensis and even HS164, which has long been considered a classic weingartia. But not JK020 *S. brederooiana* n.n.
Is this dendrogram an acceptable reason to place all these taxa into *S. tiraquensis*? The proposal in itself would probably be pure anarchy. Several taxa in the dendrogram have nothing to do with each other. Alleged similarities are the result of incorrectly chosen characteristics. Or they came about through extensive convergence. You sometimes hear such views. People probably refer to the relationship here. But is there someone who can really explain which of these taxa are more closely related or less closely related? Probably nobody does much more in this regard than expressing intuitive guesswork.
Who would assume a recent genetic exchange between the plants of Fig. 6 and Fig. 7 due to their similarity? Only when you know that the locations of these plants were only 3 km apart, will you get the idea of a close relationship.

Let's look at the dendrogram of Fig. 9 again. I claimed: "JK020 *is* a tiraquensis." But I meant: "I *call* JK020 tiraquensis, intuitively, actually without any justification." Probably you have understood my explanation above about the question "So what is *Sulcorebutia tiraquensis*?" in the sense of,*a dog is an animal with four legs, so an animal with four legs is a dog*. I think, we basically don't want to answer this question at all. We just want to identify intuitively. If we know where the plant comes from, we already have the answer, without even seeing the plant. And when it gets really difficult, we look at the label and think, "Oh yes, of course *that is it*." As I said, Sulcorebutians place more value on a positive feeling than on characteristics. Is that why Gertel and De Vries abandoned the search for a key?
At least 9 new species or varieties of *Sulcorebutia* have been described since the contribution by Gertel and De Vries in 2009, although this genus no longer exists formally. How come? Or did I miss a post?

Sometimes I wonder if our descendants will somehow understand the classification we have created.
However, intuitive evaluations still play an important role in our intellectual processes, even if we sometimes slap a stranger on the shoulder.

You also spontaneously thought in Figure 3: “This *is* a cat”?

I would like to thank Jim Gras for proof reading of the English language text.

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