Plants in Oman and UAE: Part 1 - Cruciferous Flower Fields in the Desert

The Al Hijr mountain range near the UAE's border in north Oman is a comparatively water rich area dotted with Omani-style oases. However, it is a very harsh environment with temperatures in the dry season reaching 50°C. Stones are burned black by the sun and Acacia trees stand enduring the intensive heat. As was also the case last year, this year's cooler season had a significant amount of rain, and alluvial fans that extend from the mountain slopes are speckled a faint green. Under Acacia and other trees and in hollows, the green color is more vivid. Woody plants produce new leaves, perennial plants grow new shoots from the roots, and annual plants hurriedly germinate and flower one after another.

Since these annual plants germinate only after rainfall in the cool months, they are not really either heat-resistant or drought-resistant. Nor do they appear to be salt-resistant. However, they possess characteristics that are highly adapted to the climate. Because they need to produce flowers to create seeds within a limited period after the rain, once germinated they immediately begin to grow both in size and at the same time develop reproductive functions. For as long as water is available, they continue to produce flower buds. And they die as soon as the roots reach to the dry zone. Some species can regrow if water continues to be available, therefore it might not be accurate to call them annual plants. Many of these annual plants belong to the order cruciferae. Particularly noticeable is Diplotaxis harra (photo 1) which bears vivid yellow flowers and which occurs frequently in mountain areas and alluvial fans. Another obvious species is Eremobium aegyptiacum (photo 2) which produces white flowers, and is often seen in the sand dune areas just off alluvial fans. Both occur commonly in this area and are nothing special. The sudden explosion of Diplotaxis harra, however, was truly spectacular in mid-February last year when it emerged all over the alluvial fans of the Al Hijr mountain range in the west (photo 3). This occurred as a result of intermittent rain that started in December two years ago. Erucaria crassifolia is another cruciferous plant that is seen in the area (photo 4).

Although this season has had a similar amount of precipitation, the massive clusters of Diplotaxis harra that flourished last year did not appear this year. The biggest factor for this appears to be the timing of the rainy season's commencement and termination. In the last season, there was intermittent rain from December to March. Therefore, wet conditions were maintained through all the four cooler months. By contrast, this season had only a small amount of rain in January. Although germination of Diplotaxis harra was recorded, the germs subsequently died as there was no further rain until mid-March. Although there was a reasonable quantity of rain between mid-March and mid-April, it came too late for other seeds to germinate. The temperature was also too high by then for the germs to benefit from the rain. As shown in this example, in extreme environments with constantly unpredictable climates such as those that characterize the UAE, vegetation is heavily influenced by yearly climate changes. Nonetheless, it is interesting to note the fact that such lovely cruciferous flowers manage to survive in this arid area.

Photo1（Diplotaxis harra）

Photo 2（Eremobium aegyptiacum）

Photo 3（Diplotaxis harra）

Photo 4（Erucaria crassifolia）