

## KREDARICA OBSERVATORY

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Old postcard showing the first mountain hut on Kredarica built in 1896

The highest mountain observatory in Slovenia is the observatory on Kredarica at the altitude of 2514 m asl in the Julian Alps. The Hydrometeorological Institute of Slovenia established it 1954 and since then observations and measurements have been performed without any interruption. But the interest to monitor the weather conditions in high mountains has a longer history. At the time when the first mountain observatories have been already established on some high mountains peaks in the Alps, also in Slovenia efforts to perform meteorological measurements at high altitude have been made. The first hut on Kredarica was built in 1896, with this a condition to establish a mountain observatory was fulfilled.

Meteorological monitoring on Kredarica started in 1897. The Zentralanstalt für Meteorologie und Erdmagnetismus in Vienna provided the necessary meteorological instruments and the first meteorological observer was the hut-keeper Anton Pekovec. Meteorological data were collected only during summer when the hut was opened. During the period 1897-1903 derived monthly data from Kredarica were published in the *Jahrbücher der K.K. Centralanstalt für Meteorologie und Erdmagnetismus* in Vienna. Observations were performed also in 1904 and 1905, they were published in annual reports of mountaineers, the last data from that first period of observations are for the summer 1912. Unfortunately the original data were lost during the World War II. Only derived data that were published in annual reports are available nowadays. There is no clear evidence why the meteorological observations on Kredarica were suppressed.

Triglav, being the highest mountain peak in Slovenia, is one of the most popular destinations for mountaineers; Kredarica lies on the way to the top. There was a strong interest to re-establish meteorological observations on Kredarica after World War II. There was also a plan to build up a meteorological observatory on the top of Triglav, but the option to preserve the peak of the mountain in its natural beauty prevailed. In August 1954 the Hydrometeorological Institute of Slovenia started to perform meteorological observations 3 times per day (at 7 a.m., 2 and 9 p.m.) on Kredarica. At that time there was no on-line connection from Kredarica, and during winter the meteorological observers were the only permanent inhabitants of the hut. The only way to reach the observatory was by feet, and the supplies were carried by horses. Live of observers during winter at that time was really tough. During winter because of severe weather conditions and elevated avalanche danger they were literally trapped on Kredarica. In case any observer got seriously ill during winter an emergency rescue action was necessary. During the first six months the observations were performed by young meteorologists with a university degree in meteorology, they were: Bojan Paradiž, Janko Pristov and Andrej Hočevar. All of them are already retired, two of them had had a fruitful career of university professors behind them and one of them was a director of the Hydrometeorological Institute.

There is one peculiarity that should be mentioned regarding the observatory on Kredarica. Most of the high mountain observatories in Europe are situated on the top of the mountain, this is not the case for Kredarica. Near to Kredarica there is the highest peak of the Julian Alps, Triglav (2863 m asl). Certainly, it was convenient to combine a hut and the observatory on the same place, but was that the best site from the meteorological point of view? The distortion of the wind rose because of the Triglav peak is significant, southeast and northwest winds clearly dominate the wind rose. Skilled forecasters are aware of this wind distortion, but the wind rose on Kredarica is clearly not representative for mountain peaks or the free atmosphere at that

level. This was also the reason why at the time when a reduction of meteorological stations in Slovenia started some meteorologists considered the idea to move the observatory to a more representative location. On 15 April 1991 24-hours per day observations were introduced, and a staff of 5 observers on Kredarica. Until 1994 the observations on Kredarica were performed only by conventional instruments, in 1994 an automatic measuring station was installed.

The importance of Kredarica, but also other high mountain observatories is decreasing with the adoption of new remote observing techniques and the introduction of radio-soundings in Ljubljana. But nevertheless Kredarica remains the highest meteorological station in our country, being important for the aspect of alpinismus, monitoring of climate variations and change, but also for monitoring the remains of the nearby Triglav's glacier. Triglav's glacier also named "Green ice" lies on the northeast slope of Triglav at the altitude between 2400 and 2550 m asl. The first reports about 120 years ago indicated an extension over 45 ha; in 1946 the area has decreased to only 15 ha and in 1994 only 4 ha remained.

As already mentioned at the beginning the living conditions of the observers on Kredarica were tough, many times during winter they had been completely cut off from the rest of the world, especially when the weather was unfavourable or avalanche risk was elevated. Today the personal is transported to Kredarica by helicopter, also all the necessary supplies are delivered by helicopter. The hut on Kredarica was rebuilt and enlarged in 1983, the opening period has been extended throughout the year; life on Kredarica has become more comfortable and safer also for the meteorological observers.

To conclude some of the extremes from Kredarica measured since the establishment of the mountain observatory in 1954 are mentioned: The coldest month was February 1956 with a monthly mean temperature of  $-17,2\text{ }^{\circ}\text{C}$ , the warmest month was August 1992 with a monthly mean temperature of  $10,3\text{ }^{\circ}\text{C}$ ; the highest air temperature was  $21,6\text{ }^{\circ}\text{C}$  measured on 27 July 1983. The lowest temperature of  $-28,3\text{ }^{\circ}\text{C}$  occurred on 7 January 1985. The deepest snow cover reached 7 m on 22 April 2001. The sunniest month was May 1958 with 280 hours of sunshine; the cloudiest was November 1962 with only 49 hours of sunny weather. In September 1965 the precipitation amount was 596 mm, but also completely dry months were observed, like October 1995.

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The last but one hut on Kredarica, in front the meteorological shelter covered with rime  
(author: Jernej Gartner)