de fluorescence est de 0,07 ± 0,003. Il indique que la désactivation de l'état singulet excité se fait principalement par voie non radiactive, éventuellement par passage à l'état triplet (travaux en cours).

Les mesures d'extinction de fluorescence par l'iodure d'éthyle[20] ont permis de mesurer la durée de vie du premier état singulet excité[1] $\tau = 3{,}03.\ 10^{-9}$ s. A partir des spectres d'absorption on peut calculer[21] ${}^{1}\tau = 4{,}6.\ 10^{-9}$s que l'on considérera comme étant en accord avec la valeur précédente. La règle de LEWSCHIN[22] est respectée (symétrie de l'absorption et de l'émission, Figure 2), ce qui milite en faveur de l'existence majoritaire d'une seule configuration en milieu méthanolique. On en déduit également que l'hypothèse la plus probable est que la configuration moléculaire de l'état singulet excité est très peu modifiée par rapport à celle de l'état fondamental.

Quelques-unes des photoréactions de la ptérobiline en lumière visible viennent d'être décrites[18]. Dans un milieu protique polaire, l'irradiation de l'ester diméthylique de la ptérobiline, en absence de tout autre sensibilisateur, provoque rapidement des réarrangements chimiques de la molécule qui conduisent à la formation de nouveaux pigments bleus. Parmi ceux-ci, la phorcabiline et la sarpédobiline ont été identifiées; également instable à la lumière, la phorcabiline est en partie photoisomérisée en sarpédobiline[18]. Une irradiation prolongée conduit à des dérivés d'oxydation parmi lesquels des propentdyopents et des maléimides.

La sensibilité à la lumière des pigments tétrapyrroliques de la série IX γ rend possible une éventuelle signification biologique de ces substances. Des essais qui seront effectués dans un proche avenir devraient permettre de préciser ce rôle d'un point de vue strictement photophysique (étude des transferts d'énergie).

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Lago di Tremorgio (Canton Ticino) – a Meteorite Impact Crater in the Swiss Alps?

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The investigation of meteorites and their craters has, in the epoch of space trips and of possible nuclear war, attained considerable importance for several reasons. In the first place the study and the testing of space suits in terrestrial meteor craters like Barringer Crater (Arizona) or Noerdlinger Ries (Bavaria) gave the astronauts an approximate idea of the topographical and geological surroundings to be expected on the moon. Secondly the stony meteorites were thought to supply some evidence of the possible composition of the moon's surface, although in fact completely different rock types were found. A third reason is that, as atmospherical and subterrestrial nuclear explosions are not only used for strategic purposes but also for gigantic civil construction

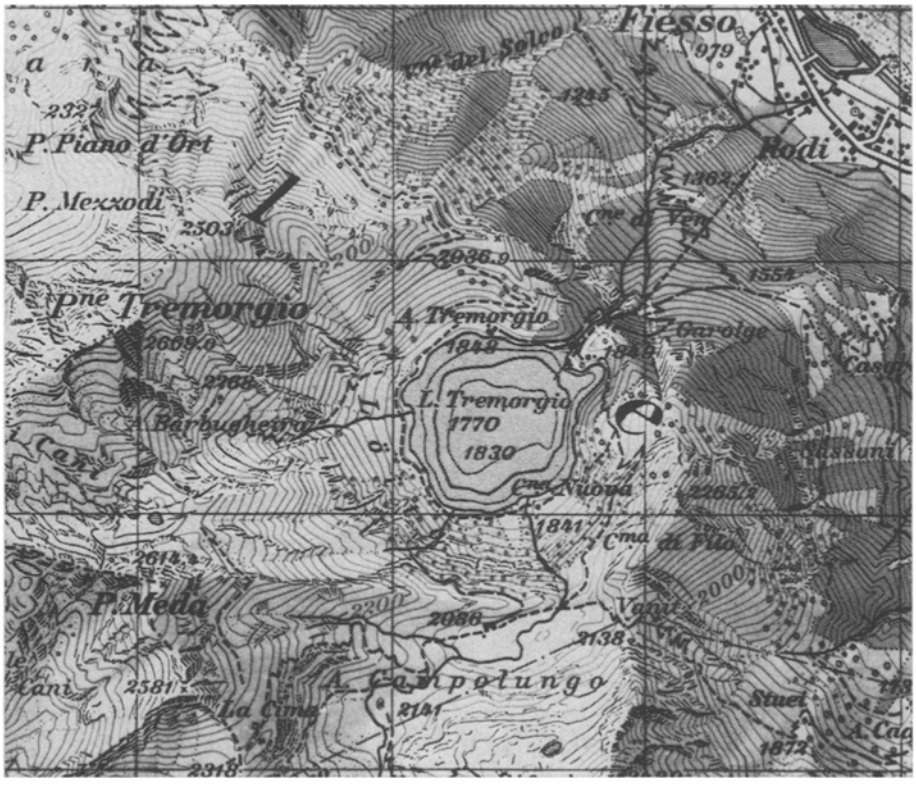

Fig. 1. Topographical map of the Lago di Tremorgio basin, ca. 10 km SE of Airolo (Valle Leventina, Canton Ticino). N-S- and W-E-diameter of the basin at the level of 2040 m about 1360 m (Grid square has 1 km sides). Section of Landeskarte der Schweiz, 1:50000, sheet *266:* Valle Leventina, 1961. Published with permission of Eidg. Landestopographie Wabern-Bern, given 7th April 1976.

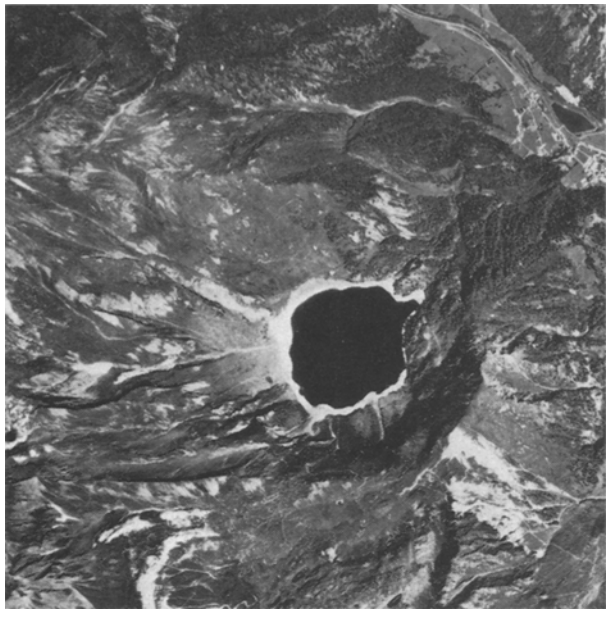

Fig. 2. Aerial photograph of the Lago di Tremorgio basin. Note the rim to the SE of the basin. The diameter of the lake is about 670 m. Scale about 1:30,000. Published with permission of Eidg. Landestopographie Wabern-Bern, given 30st December 1975.

projects, the study of their effects on rocks of different compositions is of great importance. Such effects have been shown to be very similar to meteorite or comet impacts, and, on the basis of the state of destruction or new formation of glass or minerals, under certain circumstances even the size of the explosive charge can be estimated. The study of terrestrial meteor craters gives an idea of the effects of a possible nuclear explosion in a certain area and rock.

Prospecting for scheelite by the author[1] required an intensive study of the topographical maps of the central part of the Swiss Alps for the selection of the optimal points for collecting sand samples. During this work, the author was suddenly struck by the nearly circular form of the basin (N-S- and W-E-diameter about 1360 m at a level of 2040 m) around Lago di Tremorgio (1830 m), S of Valle Leventina in the neighbourhood of Airolo[2] (Figure 1). Remembering similar morphological structures interpreted as meteorite craters[3,4], an investigation in this direction was carried out. In summer 1975 the region was examined during several field trips for indications of impact, and, surprizingly, in addition to the characteristic form on aerial photographs (Figure 2) several other observations supported this hypothesis. In addition to textural forms similar to 'shatter cones' more than 50 cm in length found in mesozonal Mesozoic calcareous mica-schists (Figure 3) E and W of the lake, and in quartz-feldspar gangue in a quartz vein (Figure 4) E of the lake, especially the quartz, and less obviously feldspars and carbonates, reveal characteristic deformation features, both in the hand specimen and under the microscope. In these quartz veins, a coarse to fine-grained cataclasis of the gangue minerals, especially of the quartz, is present, often lending the material an incohesive, sugar-like texture. Under the microscope (crossed Nicols) especially the anomalous optical behaviour of small globules, lenses and of bands in the quartz is extraordinary, and has not been found in Swiss rocks until now. These domains show bluish to yellow interference colors, because of a strong dispersion of the optical axes and imperfect extinction. They are about 100 μm in size but some bands may be several 100 μm long, sometimes even perpendi-

* The author is indebted to PD Dr. A. G. Milnes, Geol. Institute, ETH Zürich, for improvement of the English Text.

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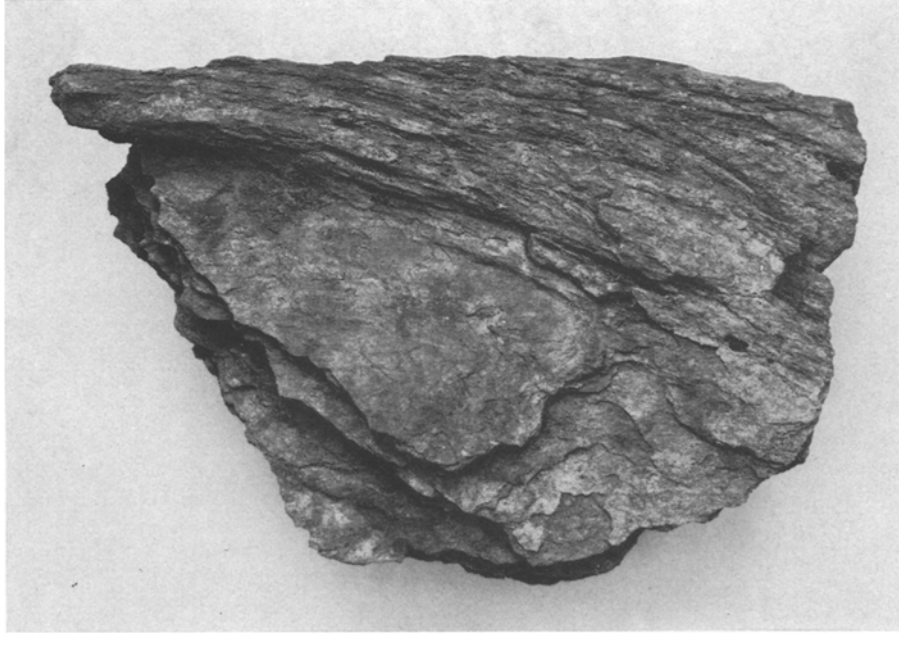

Fig. 3. 'Shatter cone' in calcareous mica-schist from the locality 'Pos Cota', E of Lago di Tremorgio, at height ca. 1940 m. Dimension of the rock 13 × 36 × 53 cm. Note the handle-like end (4 × 4 × 20 cm) at the left end of the 'cone' (20 cm wide). Photograph by K. Pfister, Photograph. Institute of ETH Zürich.

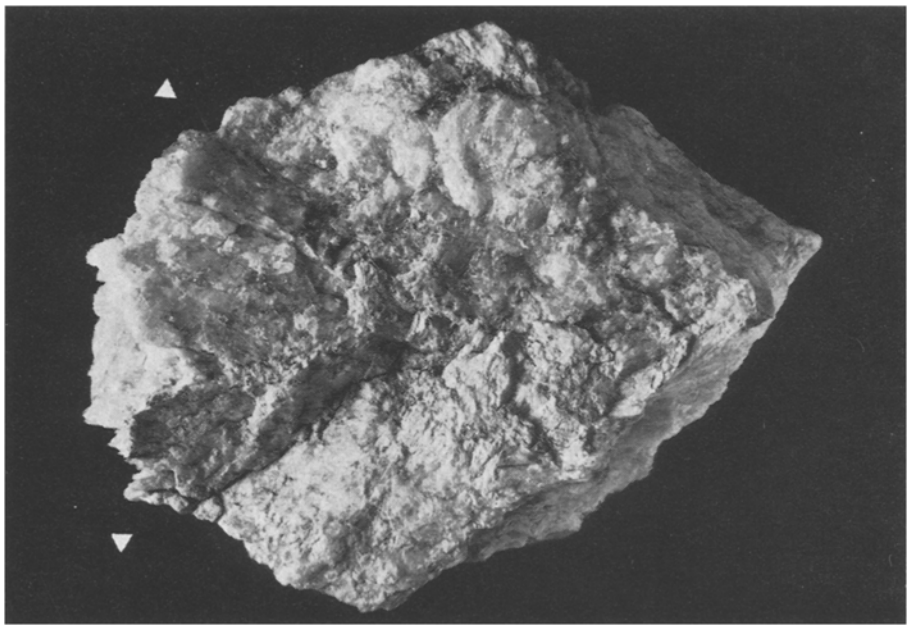

Fig. 4. 'Shatter cone' with a nearly ideal cone-shaped structure in quartz gangue with little feldspar and muscovite from the locality 'Pos Cota', E of Lago di Tremorgio, at height ca. 1920 m. The cone diameter becomes smaller over a distance of only 20 cm, from about 17 cm (left) to nearly 0 cm (right, in the center of the rock). Note the feldspar (4 × 12 cm) like part of a mantle (⌀ some mm) at the thick end of the cone (below). Dimension of the rock 20 × 20 × 38 cm long. Photograph by K. PFISTER, Photograph. Institute of ETH Zürich.

cular to each other and kinked. In the plagioclase bent albite twin lamellae (up to 10°) may also appear and grade into optically individual segregations of 50 × 100 μm and a kink angle up to 25° against the host mineral, whilst scalariform lamellae perpendicular to the twin lamellae resemble planar features. The same optically globular segregations as in the quartz were also observed in plagioclase, but more rarely. Sometimes the small spheres around the vesicles are strung like a string of beads along planes parallel to fine fractures. In other minerals, carbonates and other silicates, no indisputable indications for shock metamorphism have been found in the samples so far collected.

In addition to detailed field investigations[5], various physical tests for shock metamorphism[6–10] will be made in the near future. In particular a search will be made for the very high pressure minerals coesite[11,12] and/or stishovite[13,14] in the quartzose rocks of that region[15].

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Synthesis of Eel-Calcitonin and [Asu^{1,7}]-Eel-Calcitonin: Contribution of the Disulfide Bond to the Hormonal Activity

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Summary. Eel-calcitonin and its [Asu^{1,7}]-analog, deamino-dicarba-analog, were synthesized by the conventional solution method. The natural-type product showed 4300 MRC U/mg in the hypocalcemic potency which was comparable to that of the natural hormone isolated from eel. Hormonal activity of the Asu-analog was also as high as 3400 MRC U/mg.

In 1974, OTANI et al.[2] had succeeded in isolating a hypocalcemic factor from the pericardium and esophagus of eel, and the amino acid sequence was elucidated by NODA and NARITA[3] as shown below.

Cys-Ser-Asn-Leu-Ser-Thr-Cys-Val-Leu-Gly-Lys-Leu-Ser-Gln-Glu-Leu-His-Lys-Leu-Gln-Thr-Tyr-Pro-Arg-Thr-Asp-Val-Gly-Ala-Gly-Thr-Pro-NH_2

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