Temperature t in °C.:	Mean specific Heat $\bar{C}_p$:	True specific Heat C_p :	Atomic Heat C_p :
0°	0.03256	0.03256	6.066
100	0.03289	0.03322	6.189
200	0.03322	0.03388	6.312
300	0.03355	0.03455	6.437
400	0.03388	0.03522	6.562
500	0.03422	0.03587	6.683
600	0.03455	0.03653	6.806
700	0.03488	0.03720	6.931
800	0.03521	0.03786	7.054
900	0.03554	0.03852	7.177
1000	0.03587	0.03918	7.299
1100	0.03620	0.03985	7.424
1200	0.03653	0.04051	7.547

The value of $3R$ calories is, for C_p, already surpassed at about — 66° C.

From the measurements of the linear coefficient of the thermal dilatation by BECKER (loco cit.), the value of the mean cubic coefficient of dilation 3α can be deduced; between 15° and 1917° C. v_t can thus be calculated from the formula: $v_t = v\ (1 + 21{,}79 . 10^{-6} . t)$.

As, however, no data for k are available in the literature, c_v and C_v cannot be determined with any appreciable degree of certainty.

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Geology. — *Structure of the Sierra de Baza and adjacent regions in southern Spain.* By H. A. BROUWER and H. JANSEN.

(Communicated at the meeting of September 30, 1933.)

To the east of the basin of Guadix the older rocks of the Sierra Nevada extend northward in the Sierra de Baza, where the overthrust sheets of the Alpujarrides — which are covered by young deposits in the basin of Guadix and only locally appear along its southern margin — have a great extension.

In the Sierra de Baza the same tectonic units as those, which have been distinguished by previous authors in other parts of the northern margin of the betic mountain ranges, are developed. They are from northwest to southeast:

Guajar overthrust sheet
Lanjaron overthrust sheet } Alpujarrides

"Mixed zone" and central crystalline schists } Pennides.

The *Guajar overthrust sheet* consists of crystalline schists and, mostly crystalline, limestones of pre-mesozoic and older-mesozoic age. It has been found in the northwestern part of the Sierra de Baza and probably in an isolated patch near its northeastern part (Zujar). Isolated "klippen" of crystalline schists and limestones rest upon dolomites and limestones of the Lanjaron overthrust sheet. The crystalline schists have a vast extension to the northwest of Gor, where their floor is invisible and where they are covered by tertiary and quaternary deposits. The "klippen" are found in synclines of the Lanjaron overthrust sheet. The axes of the anticlines and synclines in this sheet have a direction from SW to NE and their axes partly converge towards the NE, while the intensity of folding also increases in this direction. The crystalline schists in the Rio de Gor belong to the Guajar overthrust sheet and do not form the crystalline base of the triassic rocks in the Sierra de Baza, as has recently been supposed by BLUMENTHAL [1]). Although the tectonic relations of these crystalline schists are not so clearly visible as in the "klippen" of the Guajar overthrust sheet farther to the south, it is evident from their petrological characteristics (schists with staurolite, andalusite, biotite and chlorite), that they belong to the same higher tectonic unit. The supposition of the same author about the existence of a "schuppen"-structure near Gor has no more been confirmed.

The *Lanjaron overthrust sheet* consists of phyllites, quartzites, limestones, dolomites and mylonitic rocks which mainly are of triassic age. It reaches a great thickness by minor thrusting and has a vast extension to the northwest of the mixed zone. A narrow strip bends to the southeast with the mixed zone along the eastern border of the basin of Guadix, while isolated patches are found still farther to the southeast.

The *"mixed zone"* consists of marbles, limestones, calcareous phyllites, quartzitic albitegneisses, tourmalinegneisses, chloritemicaschists (partly garnetiferous), conglomeratic marls (mylonitic) and ophiolites (diabase, peridotite, serpentine, amphibolite). The Pennides have not been separated yet in different tectonic units, in the "mixed zone" part of the penninic

[1]) MOR. M. BLUMENTHAL. Das Paläozoikum von Malaga als tektonische Leitzone im alpidischen Andalusien. Geol. Rundschau XXIV, 1933, p. 177, Profile 5.

mesozoic and probably the younger palaeozoic are represented. This zone forms a strip with a direction from northeast to southwest along the southeastern border of the Alpujarrides. In its southwestern part it bends to the northwest (along an axial elevation in the crystalline schists) and back to the southeast along the eastern border of the basin of Guadix, where digitations of the mixed zone and the central crystalline schists are found.

Farther to the north the mixed zone is locally uncovered in a window to the southeast of Gor, which is surrounded by the rocks of the Lanjaron overthrust sheet. One of the synclines of the Lanjaron overthrust sheet, which have been mentioned in connection with the "klippen" of the Guajar overthrust sheet can be followed in the window of Gor as a depression between cores of central crystalline schists.

The mixed zone is interrupted to the east of the Sierra de Baza, where it is covered by the young deposits of the basin of Baza. To the east of Rejano it reaches a great thickness along the northern margin of the Sierra de los Filabres. *Here it is thrusted over the Alpujarrides,* as in the neighbourhood of Seron [1]). Near Alcontar windows of triassic limestones, phyllites and gypsum of the Alpujarrides are surrounded by marbles, chloritemicaschists and garnetmicaschists of the mixed zone.

The *central crystalline schists* are micaschists, which often are garnetiferous. They mostly contain graphite and chlorite. Chloritoid and epidote also occur in these rocks. The central crystalline schists form the southern part of the Sierra de Baza and are connected with those of the central parts of the Sierra Nevada and the Sierra de los Filabres.

[1]) H. A. BROUWER and C. P. A. ZEYLMANS VAN EMMICHOVEN. The tectonics of the central part of the Sierra de los Filabres (South-Spain). These Proceed. XXVIII, 1924, p. 55.

Botany. — *Über den Einfluss des Lichtes auf die Protoplasmaströmung von Avena.* Von H. P. BOTTELIER. (Communicated by Prof. F. A. F. C. WENT.)

(Communicated at the meeting of September 30, 1933).

Über den Einfluss des Lichtes auf die Protoplasmaströmung ist wenig Bestimmtes bekannt geworden. HOFMEISTER (8) sah bei Myxomyceten nach Belichtung eine Verringerung der Strömungsgeschwindigkeit auftreten. Auch N. PRINGSHEIM (12) und EWART (7) fanden eine Verzögerung der Protoplasmaströmung unter Einfluss des Lichtes bei Characeen, Spirogyra, Vallisneria, u.s.w. Das hierbei benutzte Licht war aber so intensiv, dass es oft schon in wenigen Minuten eine starke Schädigung