

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Thurso, County of Sutherland, in Lat. 62° 14', Long. 6° 42' 8", Distance from Sea 120 fms.

Height of Cistern of the Barometer above Mean Sea-level 12 feet, above Ground 5 feet.

During the MONTH of February 1869.

The Hours of Observation are of Greenwich Time (mean)

ELECTRICITY	Days of Month.	BAROMETER.			SELF-REGISTERING THERMOMETERS, Read Daily, at 9 P.M.			HYGROMETER, No. 69172			WIND.			RAIN.			CLOUDS.			THERMOMETERS under Ground.			SEA. 830 OZONE.			GENERAL REMARKS.			Days of Month.	
		9 h. A.M.		9 h. P.M.	Projected in Shade, 4 feet above Ground.	Exposed Black Bulbs.	9 h. A.M.	9 h. P.M.	9 h. A.M.	9 h. P.M.	No. of hours in which it fell.	Amount in inches.	Velocity (0-10), and Direction.	Velocity (0-10), and Direction.	Velocity (0-10), and Direction.	Amount (6-10), and Species.	9 h. A.M.	9 h. P.M.	No. 3 inches.	No. 12 inches.	No. 22 inches.	Temperature of WELL at Depth of 0-10.	Temperature at Depth of 10-12.	Temperature at Depth of 12-15.	Temperature at Depth of 15-18.	Temperature at Depth of 18-22.				
Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max. No. 715.	Min. No. 327.	Max. in Sun's rays.	Min. on Grass.	No.	No.	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	0 h. A.M.	9 h. P.M.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.		
	1	29.140	38	29.342	47	35.5	23			28.8	27	24	23	N	2	N	21													1
	2	29.166	37	29.634	48	27	23.5			25.6	24.5	27	26	N	0.8	N	0.5													2
	3	29.176	34.8	29.608	53	41	19			29	28.6	41	38.8	E	0.5	S E	4													3
	4	29.164	49.8	29.230	57	50	41			50	48.8	49	48	SW	5	SW	4													4
	5	29.006	48	29.248	55	49	41			48.8	46.8	41	40	SW	5	SW	3													5
	6	29.236	50	29.516	56	41.5	36.5			51.5	36.8	40.5	38	SW	2	SW	5													6
	7	29.164	50	28.888	51	41	35			35.2	34.6	39.6	38.8	S	0.5	S E	2													7
	8	28.508	49	29.020	55	40	34.5			38.8	34	34.5	33	NE	1	NE	1												8	
	9	29.112	47	29.252	54	42.5	31			35	34	36.2	35.5	W	0.5	W	0.5												9	
	10	29.396	45.5	29.304	52.5	40.5	32.5			33	32	39	37	SW	0.5	SW	2												10	
	11	29.316	48	29.450	49	39	31.5			33	32.5	32	31.5	W	2	W	3												11	
	12	29.436	44	29.376	54.5	38.5	30.5			31.8	31.4	37	35.6	NW	2	SW	4												12	
	13	29.350	45.5	28.788	49	38.5	34			34.8	34.8	34	32.8	W	2	W	3												13	
	14	29.280	40.5	29.984	43	34	31.5			23.2	22.8	26	25	NW	4	NW	2												14	
	15	29.946	42	29.504	50	43.5	27			30.2	29.4	42	41.5	SE	3	SW	6												15	
	16	29.184	46.5	29.050	55	44	37			49.8	43	42.5	38	S	1.5	SW	4												16	
	17	29.178	44.5	29.321	57	43	38			42	40	41	40.5	S	2	E	0.5												17	
	18	29.624	50	29.851	50	46	40			43	41	40.5	37	NE	0.5	NE	0.5												18	
	19	29.836	49	29.704	51	41	30.5			36	34	40.5	40	N	0.5	SE	0.5												19	
	20	29.742	48	30.008	55	43	39			41	40	40.5	40	SE	1	E	0.5												20	
	21	30.066	50	30.026	53	43	34.5			43	42.5	44	42.5	SW	1.5	SW	1.5												21	
	22	29.861	51.5	29.940	54	46.5	33			45	43	33	42.5	SW	2	W	0.5												22	
	23	29.772	50	29.352	56	41.5	32.5			36	35	31.5	41	SW	2	SW	6												23	
	24	29.684	53	29.560	52	49.5	31			44	47.5	33.5	31.5	SW	5	NW	1												24	
	25	28.410	47	28.598	50	45	30.5			45	42.5	34	32.5	SW	6	W	6												25	
	26	29.701	36.5	29.238	48	39.5	30.5			31	30	31.5	21	NW	4	N	1												26	
	27	29.747	33	29.228	48	31.5	26			30	29.5	28.5	28	NW	3	W	2												27	
	28	29.682	40	29.250	47	29.5	21.5			24.5	23.5	21.5	21	NW	2	NW	1.5												28	
	29																												29	
	30																													30
	31																													31
Sums.		821.090	1115.6	813.102	1456	119.1</																								

INSTRUCTIONS FOR TAKING METEOROLOGICAL OBSERVATIONS

WITH REMARKS ON THE USE OF INSTRUMENTS

Thorslawn
Feb 1859

1

Mr ALEXANDER BUCHAN

SHIP LETTER

Secretary of the Meteorological Society of Scotland,

EDINBURGH.

BOOK-POST.

This is a historical postcard from Thorstawn, dated February 1869. The card is addressed to Mr. Alexander Buchan, Secretary of the Meteorological Society of Scotland, Edinburgh. It features a circular postmark from Edinburgh, a large handwritten signature, and a rectangular stamp reading "SHIP LETTER".

Have the goodness also to state any information you may be able to collect relative to the Crops of Grains, Hay, Potatoes, Turnips, Fruits, etc., whether plentiful, or in perfection; whether any have suffered from blight, disease, etc. Whether Epidzootic disease prevails among cattle; and the Agricultural condition of the district generally.

SHRUBS, ETC.	First in Bloom.	FRUITS.	First in Bloom.	MIGRATION BIRDS.	First Hide generally.	First in Bloom.	Departure.
Barberry,		Apple,		Cuckoo,			
Boultree or Elder,		Black Currant,		Cuckoo,			
Broom,		Cherry,		House-Swallow,			
Hazel,		Gean,		Lapwing,			
Hawthorn,		Gooseberry,		Plover,			
Holly,		Peach,		Sand-Martin,			
Iaburnum,		Pear,		Swan,			
Lilac,		Plum,		Starling,			
Mesereon,		Rhubarb,		Swallow,			
Mountain Ash or Rowan,		Strawberry,		Bairl or Corn Crake,			
Red Flowering Currant,							
Rhododendron Ponticum,							
Willow,							

OBSERVATIONS IN CONNECTION WITH THE PERIODICAL RETURN OF THE SEASONS.

INSTRUCTIONS FOR TAKING METEOROLOGICAL OBSERVATIONS.

WITH REMARKS ON THE USE OF INSTRUMENTS.

One of the objects of immediate importance that the "Scottish Meteorological Society" has proposed to itself, is to secure a from radiation during night. Their brads have a black coating, amount of cloud in the atmosphere ought to be estimated from *perfect non-comedy* in the system of observation pursued at all its which may easily be made, or mended by the application of a greater or less obscuration of the sky *or shield* (*i.e.*, within Stations. A certain degree of uniformity is absolutely necessary mixture of lamp black, and painter's ink). They are placed in 20° or 30° of the zenith). The strata of clouds that appear near to justify the publication of Monthly Results from different shadow blackened boxes, whose sides project the brads from the horizon are viewed obliquely; and thus, being made to judge observations: and it is found that differences between the wind. The "*Maxima*" should be freely exposed to the sun; of their amounts, we ought not to take them into account in the Returns from any two Stations, so very considerably as to and the "*Minima*" should rest on wooden supports a few clouds' column, though their appearances and changes ought to render them quite incomparable, may arise from dissimilarity inches in the surface of the grass, in an open situation. Snow must not be allowed to cover either of these Thermometers; from a scale of 0 to 10; thus, when the sky *overhead* is *half* in the position or shelter of instruments, different repairs, they are very liable to be moved from their position on the Scale, and ought never to affect the Minium Thermometer by being *re-set*. The self-registering upper strata of clouds travel with extreme velocity from SW, and especially the "*Minima*". Thermometers ought frequently and those in the lower regions from W, with one-third the speed of the former. Again, in the second "Cloud" to be compared with the dry bulb of the Hygrometer. The (extreme) speed of the latter, by comparison with a Standard Thermometer. When such used for Meteorological purposes till it has been carefully tested by any observer, from the Meteorological Services.

The Hygrometer consists of two Thermometers usually, but not necessarily, mounted on one frame. As apparently slight deviations from the approved and *well-tested form* of this apparatus seriously vitiate the "H. Geometrical Deductions," Observers are requested to attend to the following conditions:—
Baumgartner.—*Weather glasses* and *aneroids*, though admirably adapted, as the latter certainly are, to indicate variations of atmospheric pressure, are not well fitted for scientific purposes. Nor can any Barometer be used for Meteorological Observations that is not supplied with such means of *adjustment* or *compensation* as will secure the height of the mercury in the tube being accurately measured from the fluctuating surface of mercury in the cistern. It is also necessary that every Barometer shall have been compared with a *Standard*.

Two moderately-priced Barometers have been approved by the Council; if properly tested and attested to, they are both well adapted to Meteorological purposes. An excellent Barometer is constructed by Mr Adie of London, the use of which is attended with the great convenience of requiring no adjustment of the cistern. Its *scale-indices* are not true inches but so much shorter as to *compensate* the error that would otherwise arise from the fluctuations of the surface of mercury in the cistern. This form of instrument has been adopted by the Board of Trade, and has received the approval of the Meteorological Committee of the British Association. In another form of service, to form one straight line with its ivory tube, the mercury passes freely through the lid and base of the cistern. When the *index-line* on this little piston-rod is brought by the adjusting screw, to form one straight line with its ivory tube, the surface of the mercury is then at the exact height from which the mercury is graduated. In taking an observation, this *provisionary* under, an exact coincidence with a little over 40° or 40½°, will proceed as from the moist cloth in ordinary circumstances. One form of "Mason's" Hygrometer is highly objectionable. The frame of the Thermometers is enclosed in a tin case, which also supports the water cup underneath. This arrangement must be immediately altered by pulling the boxwood frame out of the tin case, and hanging them side by side, so that the forementioned requirements shall be complied with, as far as possible.

Reading of the Thermometer.—Great care must be taken to avoid the effects of refraction, by bringing the eye exactly opposite the tip of the index or column of mercury. The reading

ought to be taken to tenth of a degree, and noted in decimals. Thus the Thermometer will read—39°.3, 40°.0, or 40°.1; or 40°.4, 40°.5, or 40°.6, according as it indicates a little above or below the mark. The paper is affixed by a pin to a board in the thermometer-box, and the indication registered at 9 A.M. and 9 P.M.

In the case of "Mason's" Hygrometer, the frame of the thermometer is enclosed in a tin case, which is next to the surface of the water at the time of observation. The temperature of the water at the bottom of the well ought to be taken, and the depth of the well and of the water noted.

Remarks.—The "Ranarks" column is too narrow, but unavoidable so. Some of the most valuable observations that can be taken are those for which no rules can be given nor hours assigned. The use of contractions ought, therefore, to be taken every advantage of, and a list of such as are recognised and in use at Greenwich and Southampton, are given at the foot of the column. Besides special and extraordinary observations, great prominence is given to the use of contractions, and the use of such as are recognised and in use at Greenwich and Southampton, are given at the foot of the column. It is desired that these indications be registered in connection with the force and direction of the wind at the time of observation, in the following manner:—thus "sw.", as an ozone current in the scale 0—6 is 4°; "se.", that is *blowing fresh*.

Electricity.—Too much importance cannot be attached to electric condition of the atmosphere in connection with terrestrial magnetism, and as a meteorological phenomenon. A proper observatory is necessary to every complete meteorological observatory.

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storms, and remarkable falls of snow, hail, or rain, the hour of occurrence, and the wind attaining their maximum, as well as such as have been noted above. When lofty hills are in view, the height of clouds and of the upper strata of clouds, the colour of the sky, etc. Remarks additional remarks may be made on the periodic return of the seasons, possess not only great scientific value, but of considerable interest to the Agriculturist. The Council would direct the special attention of Observers to the registration of such phenomena; that the published Summaries may fairly represent the whole of Scotland. Observation ought to be confined to individual trees and shrubs; to particular species of birds; and in the case of crops, to specified sorts reared from year to year on a selected piece of ground or farm.

The use of abbreviations, the state of the weather at 9 A.M. and 9 P.M. ought to be registered, either in two columns, otherwise in two rows, on the 2nd, and extending till 9 P.M. on the 3rd. A wind-vane ought to be elevated 12 feet at least above surrounding objects. When it oscillates incessantly, the mean direction must be taken; and when it is stationary, and always when the wind is feeble, reference must be made to the direction of the lower strata of clouds overhead, and to the direction of smoke, etc.

Careful observations ought to be made on the changes in the storms, and remarkable falls of snow, hail, or rain, the hour of occurrence, and the wind attaining their maximum, as well as such as have been noted above. When lofty hills are in view, the height of clouds and of the upper strata of clouds, the colour of the sky, etc. Remarks additional remarks may be made on the periodic return of the seasons, possess not only great scientific value, but of considerable interest to the Agriculturist. The Council would direct the special attention of Observers to the registration of such phenomena; that the published Summaries may fairly represent the whole of Scotland. Observation ought to be confined to individual trees and shrubs; to particular species of birds; and in the case of crops, to specified sorts reared from year to year on a selected piece of ground or farm.

The Council recommend that *term day* observations be taken; viz., on the 21st days of March, June, September, and December. Full directions for the use of the instruments mentioned above have been printed, and may be had along with them from the Council. The Council have agreed to recommend that observers, before purchasing new instruments, should communicate with the Meteorological Secretary; and they consider it desirable that he should have full power to reject any instrument which, on being presented for comparison, does not afford him satisfaction.

(By Order) A. B.

Executive, 30th December 1865.

For Luke Howard's

Clouds.—Convenient abbreviations for

March 1869

To

Mr ALEXANDER BUCHAN,



Secretary of the Meteorological Society of Scotland,

EDINBURGH.

BOOK-POST.

These prefaces, prefaces, etc., and the Address of the General Edition of the *Periodical* general.

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Have the goodness also to state any information

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Thornton, County of Linlithgow, in Lat. 60° 15', Long. 6° 45' E, Distance from Sea 12 miles.

Height of Cistern of the Barometer above Mean Sea-level 12 feet, above Ground 5 feet.

During the MONTH of April 1869.

The Hours of Observation are of Greenwich Time (London)

EQUINOXIALITY.	Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS, Read Daily, at 9 P.M.				HYGROMETER. No. 871-91				WIND.				RAIN.				CLOUDS.				THERMOMETERS under Ground.				GENERAL REMARKS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		No. of hours in which it fell.		Amount in inches.		Velocity, (0-6), and Direction, and Species.		Velocity, (0-6), and Direction, and Species.		Hours.		No. 8 inches.		No. 12 inches.		No. 22 inches.		Temperature of WELL at Depth of feet. No.		SEA 840 OZONE.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Barometer No. 41	Attached Ther- mometer	Barometer. No. 41	Attached Ther- mometer	Max. No. 16	Min. No. 21	Max. in Sun's rays	Min. on Grass,	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.	No. 42	No. 43	No. 44	No. 45	No. 46	No. 47	No. 48	No. 49	No. 50	No. 51	No. 52	No. 53	No. 54	No. 55	No. 56	No. 57	No. 58	No. 59	No. 60	No. 61	No. 62	No. 63	No. 64	No. 65	No. 66	No. 67	No. 68	No. 69	No. 70	No. 71	No. 72	No. 73	No. 74	No. 75	No. 76	No. 77	No. 78	No. 79	No. 80	No. 81	No. 82	No. 83	No. 84	No. 85	No. 86	No. 87	No. 88	No. 89	No. 90	No. 91	No. 92	No. 93	No. 94	No. 95	No. 96	No. 97	No. 98	No. 99	No. 100	No. 101	No. 102	No. 103	No. 104	No. 105	No. 106	No. 107	No. 108	No. 109	No. 110	No. 111	No. 112	No. 113	No. 114	No. 115	No. 116	No. 117	No. 118	No. 119	No. 120	No. 121	No. 122	No. 123	No. 124	No. 125	No. 126	No. 127	No. 128	No. 129	No. 130	No. 131	No. 132	No. 133	No. 134	No. 135	No. 136	No. 137	No. 138	No. 139	No. 140	No. 141	No. 142	No. 143	No. 144	No. 145	No. 146	No. 147	No. 148	No. 149	No. 150	No. 151	No. 152	No. 153	No. 154	No. 155	No. 156	No. 157	No. 158	No. 159	No. 160	No. 161	No. 162	No. 163	No. 164	No. 165	No. 166	No. 167	No. 168	No. 169	No. 170	No. 171	No. 172	No. 173	No. 174	No. 175	No. 176	No. 177	No. 178	No. 179	No. 180	No. 181	No. 182	No. 183	No. 184	No. 185	No. 186	No. 187	No. 188	No. 189	No. 190	No. 191	No. 192	No. 193	No. 194	No. 195	No. 196	No. 197	No. 198	No. 199	No. 200	No. 201	No. 202	No. 203	No. 204	No. 205	No. 206	No. 207	No. 208	No. 209	No. 210	No. 211	No. 212	No. 213	No. 214	No. 215	No. 216	No. 217	No. 218	No. 219	No. 220	No. 221	No. 222	No. 223	No. 224	No. 225	No. 226	No. 227	No. 228	No. 229	No. 230	No. 231	No. 232	No. 233	No. 234	No. 235	No. 236	No. 237	No. 238	No. 239	No. 240	No. 241	No. 242	No. 243	No. 244	No. 245	No. 246	No. 247	No. 248	No. 249	No. 250	No. 251	No. 252	No. 253	No. 254	No. 255	No. 256	No. 257	No. 258	No. 259	No. 260	No. 261	No. 262	No. 263	No. 264	No. 265	No. 266	No. 267	No. 268	No. 269	No. 270	No. 271	No. 272	No. 273	No. 274	No. 275	No. 276	No. 277	No. 278	No. 279	No. 280	No. 281	No. 282	No. 283	No. 284	No. 285	No. 286	No. 287	No. 288	No. 289	No. 290	No. 291	No. 292	No. 293	No. 294	No. 295	No. 296	No. 297	No. 298	No. 299	No. 300	No. 301	No. 302	No. 303	No. 304	No. 305	No. 306	No. 307	No. 308	No. 309	No. 310	No. 311	No. 312	No. 313	No. 314	No. 315	No. 316	No. 317	No. 318	No. 319	No. 320	No. 321	No. 322	No. 323	No. 324	No. 325	No. 326	No. 327	No. 328	No. 329	No. 330	No. 331	No. 332	No. 333	No. 334	No. 335	No. 336	No. 337	No. 338	No. 339	No. 340	No. 341	No. 342	No. 343	No. 344	No. 345	No. 346	No. 347	No. 348	No. 349	No. 350	No. 351	No. 352	No. 353	No. 354	No. 355	No. 356	No. 357	No. 358	No. 359	No. 360	No. 361	No. 362	No. 363	No. 364	No. 365	No. 366	No. 367	No. 368	No. 369	No. 370	No. 371	No. 372	No. 373	No. 374	No. 375	No. 376	No. 377	No. 378	No. 379	No. 380	No. 381	No. 382	No. 383	No. 384	No. 385	No. 386	No. 387	No. 388	No. 389	No. 390	No. 391	No. 392	No. 393	No. 394	No. 395	No. 396	No. 397	No. 398	No. 399	No. 400	No. 401	No. 402	No. 403	No. 404	No. 405	No. 406	No. 407	No. 408	No. 409	No. 410	No. 411	No. 412	No. 413	No. 414	No. 415	No. 416	No. 417	No. 418	No. 419	No. 420	No. 421	No. 422	No. 423	No. 424	No. 425	No. 426	No. 427	No. 428	No. 429	No. 430	No. 431	No. 432	No. 433	No. 434	No. 435	No. 436	No. 437	No. 438	No. 439	No. 440	No. 441	No. 442	No. 443	No. 444	No. 445	No. 446	No. 447	No. 448	No. 449	No. 450	No. 451	No. 452	No. 453	No. 454	No. 455	No. 456	No. 457	No. 458	No. 459	No. 460	No. 461	No. 462	No. 463	No. 464	No. 465	No. 466	No. 467	No. 468	No. 469	No. 470	No. 471	No. 472	No. 473	No. 474	No. 475	No. 476	No. 477	No. 478	No. 479	No. 480	No. 481	No. 482	No. 483	No. 484	No. 485	No. 486	No. 487	No. 488	No. 489	No. 490	No. 491	No. 492	No. 493	No. 494	No. 495	No. 496	No. 497	No. 498	No. 499	No. 500	No. 501	No. 502	No. 503	No. 504	No. 505	No. 506	No. 507	No. 508	No. 509	No. 510	No. 511	No. 512	No. 513	No. 514	No. 515	No. 516	No. 517	No. 518	No. 519	No. 520	No. 521	No. 522	No. 523	No. 524	No. 525	No. 526	No. 527	No. 528	No. 529	No. 530	No. 531	No. 532	No. 533	No. 534	No. 535	No. 536	No. 537	No. 538	No. 539	No. 540	No. 541	No. 542	No. 543	No. 544	No. 545	No. 546	No. 547	No. 548	No. 549	No. 550	No. 551	No. 552	No. 553	No. 554	No. 555	No. 556	No. 557	No. 558	No. 559	No. 560	No. 561	No. 562	No. 563	No. 564	No. 565	No. 566	No. 567	No. 568	No. 569	No. 570	No. 571	No. 572	No. 573	No. 574	No. 575	No. 576	No. 577	No. 578	No. 579	No. 580	No. 581	No. 582	No. 583	No. 584	No. 585	No. 586	No. 587	No. 588	No. 589	No. 590	No. 591	No. 592	No. 593	No. 594	No. 595	No. 596	No. 597	No. 598	No. 599	No. 600	No. 601	No. 602	No. 603	No. 604	No. 605	No. 606	No. 607	No. 608	No. 609	No. 610	No. 611	No. 612	No. 613	No. 614	No. 615	No. 616	No. 617	No. 618	No. 619	No. 620	No. 621	No. 622	No. 623	No. 624	No. 625	No. 626	No. 627	No. 628	No. 629	No. 630	No. 631	No. 632	No. 633	No. 634	No. 635	No. 636	No. 637	No. 638	No. 639	No. 640	No. 641	No. 642	No. 643	No. 644	No. 645	No. 646	No. 647	No. 648	No. 649	No. 650	No. 651	No. 652	No. 653	No. 654	No. 655	No. 656	No. 657	No. 658	No. 659	No. 660	No. 661	No. 662	No. 663	No. 664	No. 665	No. 666	No. 667	No. 668	No. 669	No. 670	No. 671	No. 672	No. 673	No. 674	No. 675	No. 676	No. 677	No. 678	No. 679	No. 680	No. 681	No. 682	No. 683	No. 684	No. 685	No. 686	No. 687	No. 688	No. 689	No. 690	No. 691	No. 692	No. 693	No. 694	No. 695	No. 696	No. 697	No. 698	No. 699	No. 700	No. 701	No. 702	No. 703	No. 704	No. 705	No. 706	No. 707	No. 708	No. 709	No. 710	No. 711	No. 712	No. 713	No. 714	No. 715	No. 716	No. 717	No. 718	No. 719	No. 720	No. 721	No. 722	No. 723	No. 724	No. 725	No. 726	No. 727	No. 728	No. 729	No.

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Sherburne, County of Northumberland, in Lat. 61° 17', Long. 6° 49' E., Distance from Sea 100 fms.

Height of Cistern of the Barometer above Mean Sea-level 12 feet, above Ground 5 feet.

During the MONTH of May 1869.

The Hours of Observation are of Greenwich Time, not London.

ELECTRICITY. Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS. Read Daily, at 9 P.M.				HYGROMETER. No. 911111				WIND.				RAIN.				CLOUDS.				THERMOMETERS. under Ground.				GENERAL REMARKS. As to occurrence of Thunder Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.	Days of Month.	
	9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		9 h. A.M.		P.M.		9 h. A.M.		P.M.								
	Barometer No. 91	Attached Thermometer No. 91	Barometer No. 91	Attached Thermometer No. 91	Max. No. 111111	Min. No. 111111	Max. in Sun's rays No. 111111	Min. on Grass. No. 111111	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.	No. of hours in which it fell.	Amount in inches.	Velocity (0-6), and Direction.	Amount (0-10), and Species.	Anemometer No. 111111	Velocity (0-10), and Direction.	Amount (0-10), and Species.	Anemometer No. 111111	Hours.	SUNSHINE.	SEA.	OZONE.			
1	30.048	50	30.448	51	48	33	41	36	32	N	0	NE	1					0	0												1
2	30.423	46	30.210	52	40	36	34	34	33	NE	0	NE	0																	2	
3	30.270	47	30.256	52	44	33	41	33	34	E	0	E	0																	3	
4	30.250	50	30.142	53	46	30	41	35	34	N	0	N	1																	4	
5	30.162	45	29.940	48	41	33	40	35	33	NW	1	N	0																	5	
6	29.666	42	29.660	50	41	29	40	35	32	N	1	W	1					0.19												6	
7	29.558	43	29.612	49	41	29	41	37	32	N	1	W	0																7		
8	29.658	46	29.701	48	45	26	42	34	32	NE	1	-	-																8		
9	29.586	48	29.644	56	45	30	42	35	33	SW	1	W	0					0.68											9		
10	29.600	54	29.568	55	48	36	46	44	39	S	2	3	0					0.10										10			
11	29.580	51	29.680	52	51	37	47	42	35	N	0	N	0					0.01										11			
12	29.522	49	29.492	51	46	33	44	39	33	W	1	W	0					0.11										12			
13	30.062	48	30.270	53	50	39	45	40	37	W	1	SW	0					0.05										13			
14	30.398	47	30.430	52	51	33	49	43	33	N	0	N	0																14		
15	30.420	49	30.444	56	52	36	48	44	37	S	0	S	0																15		
16	30.288	52	30.096	55	50	38	46	42	40	S	0	NE	0																16		
17	29.988	48	29.974	52	44	38	41	40	39	NE	1	NE	1					0.04										17			
18	29.966	49	29.958	53	50	37	49	40	36	NE	1	NE	1					0.04										18			
19	29.959	49	29.958	52	46	36	41	38	36	NE	1	NE	0					0.07										19			
20	29.962	48	29.972	53	44	39	47	35	35	NE	1	NE	1					0.09										20			
21	29.918	46	30.084	51	46	33	49	36	36	NE	2	NE	1															21			
22	30.150	48	30.218	51	49	34	42	35	36	NE	1	NE	0															22			
23	30.180	52	30.264	55	49	36	44	39	30	NE	0	NE	0															23			
24	30.116	50	30.104	56	46	38	47	38	37	N	0	S	0															24			
25	30.112	52	30.106	56	50	37	46	40	38	NW	0	NE	0					0.09									25				
26	30.116	44	30.216	56	51	33	39	34	36	N	1	N	0															26			
27	30.201	48	30.210	56	45	33	44	36	33	N	1	NE	0															27			
28	30.228	46	30.230	57	42	33	39	38	37	SE	1	S	1					0.14									28				
29	29.384	52	29.464	52	52	40	48	46	37	W	3	NW	2					0.40									29				
30	30.041	48	30.206	50	43	31	42	39	35	W	1	W	1															30			
31	30.190	45	30.238	54	46	35	42	38	36	S	0	S	0															31			

INSTRUCTIONS FOR TAKING METEOROLOGICAL OBSERVATIONS.

WITH REMARKS ON THE USE OF INSTRUMENTS

Three days

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Mr ALEXANDER BUCHAN

Secretary of the Meteorological Society of Scotland

EDINBURGH

OBSERVATIONS IN CONNECTION WITH THE PERIODICAL RETURN OF THE SEASONS.

INSTRUCTIONS FOR TAKING METEOROLOGICAL OBSERVATIONS,

WITH REMARKS ON THE USE OF INSTRUMENTS.

ONE of the objects of immediate importance that the "Scottish" is registering the greatest heat from the sun's rays, and the least nomenclature of clouds will be found on the other side. The Meteorological Society has proposed to itself, is to secure a from radiation during night. Their bulbs have a black coating, amount of cloud in the atmosphere ought to be estimated from *perfect uniformity* in the system of observation pursued at all its which may easily be made, or mended by the application of a mixture of lamp black and painter's ink. They are placed in 20° or 30° of the zenith). The strata of clouds that appear near stations. A certain degree of uniformity is absolutely necessary in the position or siting of the instrument. The sun's rays are directed that appear near the horizon are viewed obliquely; and thus, being unable to judge observations; and it is found that differences between the wind. The "Minimam" should be freely exposed to the sun, of their amount, we ought not to take them into account in the Rents from any two Stations, so very considerable as to and the "Minimam" should rest on wooden supports a few clouds column, though their appearances and changes ought to render than quite incomparable, may arise from dissimilarity inches from the surface of the grass, in an open situation. He noted among the "Remarks," the amount of cloud is entered from a scale of 0 to 100, thus, when the sky overhead is half shadowed clouds, 5 is entered as the *Deseretion*, and so on. observation, or even from the use of differently constructed instruments. It is therefore hoped, that those persons who inevitably fail in achieving one of the main objects of Meteorological Observation, will by a scrupulous furnish Reports to the Society, till it has been generally attention to the following Directions, secure the following manner:—In the column "Velocity of the atmosphere," the entries in the schedule are to be made in the following manner:—In the column "Velocity of the atmosphere," till it has been generally used for Meteorological purposes, till it has been generally tested with a Standard Thermometer. When such Thermometers as are not graduated on the stem, but merely *notched* and placed in water to cool them, they are very liable to be observed. Observers in some few cases, may find it impossible to use them. The self-registering Thermometers, ought frequently in such instances, they are specially designed to rank opposite, not necessarily, mounted on one frame. As apparently slight deviations from the standard form of these apparatuses, it is desired that the number may be had, on the self-registering thermometer, in the time of reading the instruments will be necessary, visited the "Hygrometer and Barometer" Observers, *Underground Thermometers*.—No instrument ought to be used for Meteorological Observations, unless it is well fitted for scientific purposes. Nor can any Barometer be used for Meteorological Observations scales and frame to which they are attached, —the frame must be used with such means of *adjustment* as will bring the bulb forward by an inch, from any that is not supplied with them. The frame of the Thermometers is enclosed in a box, which as will secure the height of the mercury in the tube, and fastened to the neck of the bulb by the hand, and the observer that the glass is always *clean and moist*, and the thermometer is always *dry*. When the water-cup must be covered, and placed to the sides, and little below the level of the water bath,—in no case under the bulb,—the glass must be of medium fineness, and fastened to the bulb by the hand, and the observer that it always supplies it with water. It must be seen to be cotton, if properly tested and attended to, they are both well adapted to Meteorological purposes.

An excellent Barometer is constructed by Mr Adie of London, the use of which is attended with the great convenience of requiring no *adjustment* of the cistern. Its *scale-inches* are not true of observation. From the film of ice thus formed evaporation will proceed as from the moist cloth in ordinary circumstances. One form of "Mason's" Hygrometer is highly objectionable, that is not supplied with such means of *adjustment* as will bring the bulb forward by an inch, which also supplies it with water. The frame of the Thermometers is enclosed in a box, which as will secure the height of the mercury in the cistern. It is also necessary that every Barometer shall have been compared with a Standard. Two moderate-priced Barometers have been approved by the Council, if properly tested and attended to, they are both well adapted to Meteorological purposes.

The instrument so that the mercury strikes the top of the tube, when the thermometer will be read —30° 9, 40° 0, or 40° 4; or removed from its fastenings, the ivory peg must be screwed so as to form a tight plug to the cistern. Then *screw up* the tube, until an exact coincidence with, or a little over 40°, or 40° 5, used. The mercury is then within a quarter of an inch of the top of the tube, and take down the instrument; it may then be carried with the plan. The Barometer should be suspended by a little ivory peg, whose end is to be inserted in the hole and base of the cistern. When a Barometer having adjustable surfaces has to be read, Rutherford's method of *end-in-end* on this little piston-rod is adopted, by the adjusting screw to form a *straight line* with those on its iron frame, the surface of the mercury is then at the exact height from which the scale is graduated.

In taking an observation, this *preliminary setting* must be made with scrupulous accuracy; as a slight error here will vitiate the readings from the *venier*. When a Barometer having adjustable surfaces has to be read, Rutherford's method of *end-in-end* on this little piston-rod is adopted, by the adjusting screw to form a *straight line* with those on its iron frame, the surface of the mercury is then at the exact height from which the scale is graduated. It must be perfectly perpendicular, and exposed to neither the sun's direct rays nor the heat of a fire.

In taking an Observation, the attached Thermometer is first noted: the tube must then be gently tapped, and gently tapping it, and if this is necessary to refer their occurrence to their proper meteorological class. In the Society's schedules, the indications registered on the 3rd are those of a series of phenomena commencing at 9 A.M. and 9 P.M. The Hygrometer is read at 9 P.M. The self-registering Thermometers are read on the 2nd, and extending till 9 P.M. The Barometer will be read at 9 P.M. only, as indicating the greatest and least degrees of the instrument so that the mercury strikes the top of the tube, a *sharp tap* is produced. If this is prevented by air it temperature in the 24 hours preceding. It is not a matter of care, to within a quarter of an inch of the top of the tube, Thermometers, especially of the wet and dry bulb, must be read above surrounding objects. When it oscillates incessantly, the mean direction must be taken; and when it is stationary, and the tube is to be held to give highly interesting and important results.

The Barometer should be suspended in a good *height*, which is to be had by bringing the lid and base of the cistern, so as to prevent heat from the *venier*. The use of a *lass* will greatly facilitate an accurate adjustment and reading of the Barometer. The instruments are suspended on cross-slats, in the centre of the Box, and the door opening to the north. To accommodate a duplicate set of instruments, which is most desirable, doors are also made to open to the south. These Boxes may be hung against, and may be easily rendered by an observer.

Self Registering Thermometers.—Professor Phillips' and Negretti and Zambra's Patent "Minimam" Thermometers are recommended; printed directions for their use may be obtained with each instrument. The "Minimam" Thermometer is recommended, when graduated on the glass stem and affixed to a frame separate from the "Minimam." This Thermometer is liable to two dangers, both of which must be guarded against, and may be easily rendered by an observer.

When the *columns* of spirit break, it may be re-united by soldering, and the instrument repeated against the palm of the hand; when the part of the spirit distils by high temperature, it will be found in the upper tube, and must be dislodged from thence by heating that part over a lamp; the alcohol will evaporate and again condense in contact with the body of the liquid. These instruments should be hung horizontally.

The above remarks apply equally to the Thermometers for Clouds.—Convenient abbreviations for

Clouds, possess not only great scientific value, but are of considerable interest to the Agriculturist. The Council would direct the special attention of Observers to the registration of such phenomena; that the published Summaries may fairly represent the whole of Scotland. Observation ought to be made on the individual trees and shrubs; to particular species of birds; and in the case of crows, to specified sorts reared from year to year on a selected piece of ground or farm.

The Council recommend that *term day* observations be taken; and 9 A.M. ought to be recorded, either in two columns, otherwise in one, or two ruled off for the purpose, from that which passes it over day; it is intended that observations by the Electrometer should be entered in this manner on the side margin. Additional remarks may be made on the periodic return of the upper strata of clouds, the colour of the sky, &c. Remarks on the use of abravations, the state of the barometer, thunderstorms and remarkable falls of snow, hail, or rain, the force of winds attaining their maximum, as well as such notes as Greenwich and Southampton, are given at the foot of the column. Besides special and extraordinary observations, great prominence ought to be given in this column to prevalent diseases, differences in character, column, velocity, and direction between the lower and upper strata of clouds, the colour of the sky, &c. Remarks on storms as have been hinted at above. When lotties fall are to be made on the occurrence of meteors, aurora borealis, remarkable depressions and elevations of the barometer, thunderstorms and remarkable falls of snow, hail, or rain, the force of winds attaining their maximum, as well as such notes as Greenwich and Southampton, are given at the foot of the column. It is intended that observations by the Electrometer should be entered in this manner on the side margin. Additional remarks may be made on the periodic return of the upper strata of clouds, the colour of the sky, &c. Remarks on the use of abravations, the state of the barometer, thunderstorms and remarkable falls of snow, hail, or rain, the force of winds attaining their maximum, as well as such notes as Greenwich and Southampton, are given at the foot of the column. It is intended that observations by the Electrometer should be entered in this manner on the side margin. 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SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Thurso, County of Sutherland, in Lat. 60° 28', Long. 6° 48' 8", Distance from Sea 120 fms miles.

Height of Cistern of the Barometer above Mean Sea-level 12 feet, above Ground 5 feet.

During the MONTH of August 1869.

The Hours of Observation are of Greenwich Time (London)

ELECTRICITY. Days of Month.	BAROMETER.				SELF-REGISTERING THERMOMETERS, Read Daily, at 9 P.M.				HYGROMETER. No. 311-321				WIND.				RAIN.		CLOUDS.				THERMOMETERS under Ground.				GENERAL REMARKS.					
	9 h. A.M.		9 h. P.M.		Protected in Shade, 4 feet above Ground.		Exposed Black Bulbs.		9 h. A.M.		9 h. P.M.		9 h. A.M.		9 h. P.M.		No. of hours in which it fell.	Amount in inches.	9 A.M.		P.M.		9 h. A.M.		SEA. 510				As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevailing Diseases, etc.			
	No. 91	Barometer.	Attached Thermometer.	Barometer.	Attached Thermometer.	Max. No. 16	Min. No. 23	Sun's rays	No. 16	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	No. 78	Velocity (0-5), Amount (0-10), and Direction.	No. 78	Velocity (0-5), Amount (0-10), and Direction.	No. 78	Velocity (0-5), Amount (0-10), and Direction.	No. 8	No. 12	No. 22	Temperature at 1 fathom, 0-10.	Temperature at Depth of WELL at 1 fathom, 0-10.	9 A.M.	9 P.M.	Mention the hour at which Storms began and ended.	Days of Month.		
1	29.924	53	29.764	51	50.5	45.5		47.1	47	46.5	45	N	NE	0.5	NE	1	0.40					o	o	o	o	o	9.5	9.5		1		
2	29.844	54	29.760	57	54.5	46.5		51.9	49.5	49.5	48.5	N	NE	0.5	NE	1	0.06					12.5	12.5	12.5	12.5	12.5	10.5	10.5		2		
3	29.776	54	29.966	56	54.5	45.5		50.2	49	48.5	47	NE	1	NE	2		0.14					9.5	9.5	9.5	9.5	9.5	9.5	9.5		3		
4	30.046	54	30.190	57	52.5	43.5		52.4	47	47.5	42	NE	0.5	NE	0.5		—					3.5	3.5	2.5	2.5	2.5	3.5	3.5		4		
5	30.308	54	30.401	57	53.5	49.5		51.8	48	47.5	40	SW	0.5	Calm	0		—					12.5	12.5	12.5	12.5	12.5	12.5	12.5		5		
6	30.330	53	30.040	58	55	37.5		52.8	48.5	50.5	47.5	SW	1.5	SW	2		0.08					10.5	10.5	10.5	10.5	10.5	10.5	10.5		6		
7	29.684	53.5	29.644	58	53.5	48.5		55.5	52.5	49.5	47.5	W	1.5	W	0.5		0.90					10.5	10.5	10.5	10.5	10.5	10.5	10.5		7		
8	29.474	53	29.488	56	52.5	43.5		52.3	49.5	47.5	45	W	1	W	1		0.06					9.5	9.5	9.5	9.5	9.5	9.5	9.5		8		
9	29.444	49	29.532	53	49.5	42		48.8	46	46.5	44.5	N	1.5	N	2		0.16					12.5	12.5	12.5	12.5	12.5	12.5	12.5		9		
10	29.778	50	29.966	54	51	44.5		50.5	48.5	47.5	41	N	1.5	N	1		0.06					12.5	12.5	12.5	12.5	12.5	12.5	12.5		10		
11	30.050	50	30.074	54	52.5	38.5		52.1	47	38.5	37	N	0.5	Calm	0		—					10.5	10.5	10.5	10.5	10.5	10.5	10.5		11		
12	30.026	52	29.908	58	49	33.5		46.5	42.5	46.5	43	SE	0.5	SE	0.5		—					12.5	12.5	12.5	12.5	12.5	12.5	12.5		12		
13	29.944	53	29.856	57	51.5	43		49.9	45.5	49.5	45.5	SE	0.5	SW	0.5		—					12.5	12.5	12.5	12.5	12.5	12.5	12.5		13		
14	29.964	56	30.022	57	56	44.5		53.4	51.5	49.5	48	W	0.5	W	1		0.06					12.5	12.5	12.5	12.5	12.5	12.5	12.5		14		
15	29.948	58	30.064	60	56.5	49		54.4	54	52	48.5	SW	2	SW	1		0.25					12.5	12.5	12.5	12.5	12.5	12.5	12.5		15		
16	30.160	57	30.160	59	53	50.5		52.5	51.5	50.5	48	SW	2	SW	3		0.08					12.5	12.5	12.5	12.5	12.5	12.5	12.5		16		
17	30.336	60	30.360	62	56.5	47.5		52.8	50	52.5	52	W	1	W	0.5		0.08					12.5	12.5	12.5	12.5	12.5	12.5	12.5		17		
18	30.262	60	30.284	62	57	52		52.8	53	52.5	50.5	SW	1.5	SW	0.5		0.19					12.5	12.5	12.5	12.5	12.5	12.5	12.5		18		
19	30.260	61	30.176	63	58	51.5		52.6	52.5	55.5	54.5	SW	0.5	SW	4		0.74					12.5	12.5	12.5	12.5	12.5	12.5	12.5		19		
20	30.148	62	30.312	62	63	46.5		55.5	55	56	42.5	SW	0.5	N	0.5		0.98					12.5	12.5	12.5	12.5	12.5	12.5	12.5		20		
21	30.350	57	30.392	60	57.5	41.5		52.6	52	50.5	48	W	1	W	0.5		—					12.5	12.5	12.5	12.5	12.5	12.5	12.5		21		
22	30.360	58	30.322	60	58.5	48		55.5	52.5	52.5	50.5	SW	0.5	S	0.5		—					12.5	12.5	12.5	12.5	12.5	12.5	12.5		22		
23	29.784	57	29.724	57	57	49		52.9	53	52.5	52	SE	3	SW	3		1.04					12.5	12.5	12.5	12.5	12.5	12.5	12.5		23		
24	29.740	56	29.840	60	56	50.5		54.5	53	52.5	52	W	1.5																			

SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Glenburn Glen, County of _____, in Lat. 62° 2' N., Long. 6° 43' E., Distance from Sea 1000 feet miles.

Height of Cistern of the Barometer above Mean Sea-level 12 feet, above Ground 5 feet.

During the MONTH of September 1869.

The Hours of Observation are of Greenwich Time (Summer)

ELECTRICITY. Days of Month.	BAROMETER.			SELF-REGISTERING THERMOMETERS, Read Daily, at 9 P.M.			HYGROMETER. No. 81-71			WIND.			RAIN.			CLOUDS.			THERMOMETERS, under Ground.			OZONE.			GENERAL REMARKS.			Days of Month.	
	9 h. A.M.		9 h. P.M.	Protected in Shade, 4 feet above Ground.	Exposed Black Bulbs.	Max. in Sun's rays	Min. on Grass,	Max. in Min. on Grass,	Min. on Grass, No. 10	9 h. A.M.	9 h. P.M.	9 h. A.M.	9 h. P.M.	Amount in inches. No. 71	No. of hours in which it fell.	Velocity, (0-6), and Direction.	Velocity, (0-10), and Direction.	Amount, (0-10), and Species.	SUNSHINE, Hours.	9 h. A.M.	9 h. P.M.	Temperature of WELL at Depth of feet, No. 670	SEA Temperature at Station, and Dist. in miles.	OZONE.	As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.				
	Barometer No. 91	Attached Ther- mometer	Barometer, No. 91	Attached Ther- mometer	Max.	Min.	No. 10	No. 10	Dry bulb.	Wet bulb.	Dry bulb.	Wet bulb.	Direction.	Force.	Direction.	Force.	Direction.	Species.	No. 3 inches.	No. 12 inches.	No. 22 inches.	9 A.M.	9 P.M.	Molten	0-10.	Mention the hour at which Storms began and ended.			
1	29.942	54	29.942	56	56	46	46	54.7	58	46.8	44.5	N	1	N	0			0.10						9.5	10.5				1
2	29.948	55	29.948	56	57.5	46	46	54.5	52.5	49.8	46	W	1	W	4			0.12						9.5	10.5	Cloudy.			2
3	29.946	55	29.942	59	53	48	48	52.6	48.2	53.5	51	SW	3	S	5			0.48						9.5	10.5	Cloudy.			3
4	29.940	56	29.940	59	55	49	49	51.8	50.4	52.5	48.5	S	4	SW	3			0.28						9.5	10.5	Cloudy.			4
5	29.948	56	29.940	58	52.5	49.5	49	51	50.5	52.5	51	SW	0	Calm	0			—						9.5	10.5	Fog.			5
6	29.948	56	29.948	58	52.5	49	49	51.8	49	50.8	48.4	SW	2	SW	0			0.48						9.5	10.5	Cloudy.			6
7	29.948	54	29.942	57	52	40	40	50.6	47.5	48.5	46	S	0.5	SE	1			0.09						9.5	10.5	Cloudy.			7
8	29.946	53	29.940	58	56	48.5	48.5	50.5	49.5	52.5	49.5	S	0.5	SW	1			0.44						9.5	10.5	Cloudy.			8
9	29.942	56	29.940	59	55	47	47	52.5	51	50.8	50.2	S	2	SE	0			0.18						9.5	10.5	Fog.			9
10	29.940	53	29.940	59	54	50	50	53.5	52.5	50.5	50	E	0.5	E	0			0.21						9.5	10.5	Fog.			10
11	29.942	56	29.944	57	55.5	50	50	51	50.5	51.6	48.5	S	0.5	SW	3			0.12						9.5	10.5	Fog.			11
12	29.942	51	29.940	59	54	44	44	50.5	48.5	50.5	49.5	S	1	SE	0			0.08						9.5	10.5	Cloudy.			12
13	29.944	56	29.948	59	55	48	48	51.5	50.5	49.5	47.5	NE	0.5	NE	0.5			0.19						9.5	10.5	Cloudy.			13
14	29.940	54	29.948	59	54	45	45	46.5	44.5	47.5	46.5	NE	1	E	3			0.04						9.5	10.5	Cloudy.			14
15	29.940	51	29.940	55	48	46	46	46.5	46	46.5	45.5	NE	3	NE	1			0.36						9.5	10.5	Cloudy.			15
16	29.948	51	29.942	52	49.5	46	46	45.5	42	38	36	NE	1.5	S	0			0.05						9.5	10.5	Cloudy.			16
17	29.942	49	29.940	52	49	42	42	40	39	37.5	39	NE	0.5	E	1.5			0.03						9.5	10.5	Cloudy.			17
18	29.946	48	29.940	56	48	40	40	45.5	43.5	48.5	48.5	NE	4	NE	2			1.22						9.5	10.5	Cloudy.			18
19	29.946	51	29.940	56	50	44	44	46.5	43.5	46.5	45	NE	1	NE	0.5			0.60						9.5	10.5	Cloudy.			19
20	29.940	54	29.944	49	46	35	35	44.5	40.5	39.5	36	N	0.5	N	0.5			0.14						9.5	10.5	Cloudy.			20
21	29.948	41	29.942	46	43.5	35	35	39.5	35.5	38	35	N	1.5	N	0.5			0.03						9.5	10.5	Cloudy.			21
22	29.948	44	29.940	49	42.5	34	34	40.5	36.5	34.5	32	N	1	N	0.5			—						9.5	10.5	Cloudy.			22
23	29.942	45	29.940	49	46	28	28	41.5	39	44.5	43	N	0.5	NE	0.5			0.08						9.5	10.5	Cloudy.			23
24	29.944	41.5	29.948	50	45	38.5	38.5	40	37.5	40	37.5	NE	0.5	NE	1			0.08						9.5	10.5	Cloudy.			24
25	29.940	47	29.942	51	44	40	40	43.5	42	42.5	41.5	E	3	E	5			1.84						9.5	10.5	Cloudy.			25
26	29.940	48	29.940	50	46	40	40	44.5	41	43	37	N	2	N	0.5			0.21						9.5	10.5	Cloudy.			26
27	29.942	41.5	29.946	52	46	33	33	41.5	36.5</td																				

INSTRUCTIONS FOR TAKING WEATHER OBSERVATIONS.

TITHE REMARKS ON THE USE OF INSTRUMENTS.

To

Mr ALEXANDER BUCHAN

Secretary of the Meteorological Society of Scotland,

SHIP LETTER

BOOK-POST.

EDINBURGH.

OBSERVATIONS IN CONNECTION WITH THE PERIODICAL RETURN OF THE SEASONS.

INBUCHEN, 9.^h December 1865.

INSTRUCTIONS FOR TAKING METEOROLOGICAL OBSERVATIONS,

WITH REMARKS ON THE USE OF INSTRUMENTS

ALEXANDER BUCHAN

Secretary of the Meteorological Society

EDINBURGH.

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SCOTTISH METEOROLOGICAL SOCIETY.

Observations taken at Glasgow, County of Dunbartonshire, in Lat. 56° 2' N., Long. 6° 43' E., Distance from Sea 120 miles.

Height of Cistern of the Barometer above Mean Sea-level 12 feet, above Ground 5 feet.

During the MONTH of November 1869.

The Hours of Observation are of Greenwich Time (London)

ELECTRICITY. Days of Month.	BAROMETER.		SELF-REGISTERING THERMOMETERS, Read Daily, at 9 P.M.				HYGROMETER. No. 891-2		WIND.		RAIN.		CLOUDS.		THERMOMETERS, under Ground.		SEA. Temperature at Depth of 10-100 feet, No.	OZONE. Temperature at Depth of 10-100 feet, No.	GENERAL REMARKS.		Days of Month.		
	9 h. A.M.	9 h. P.M.	Protected in Shade, 4 feet above Ground.	Exposed Black Bulbs.	Max. No. 7165	Min. No. 3237	Max. in Sun's rays No. 21	Min. on Grass, No. 21	9 h. A.M.	9 h. P.M.	9 h. A.M.	9 h. P.M.	No. of hours in which it fell.	Velocity, (0-5), and Direction, No. 78	Velocity, (0-10), and Direction, No. 78	Hours.	No. 3 inches.	No. 12 inches.	No. 22 inches.	As to occurrence of Thunder, Lightning, Storms, Hail, Meteors, Remarkable Depression or Elevation of Barometer, Prevalent Diseases, etc.			
	Barometer, No. 91	Attached Ther- mometer	Barometer, No. 91	Attached Ther- mometer	Barometer, No. 91	Attached Ther- mometer	Barometer, No. 91	Attached Ther- mometer	Barometer, No. 91	Attached Ther- mometer	Barometer, No. 91	Attached Ther- mometer	Barometer, No. 91	Attached Ther- mometer	Barometer, No. 91	Attached Ther- mometer	Mention the hour at which Storms began and ended.						
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

NOTATION USED IN GENERAL REMARKS.	
a.	denotes aurora.
c.	denotes clouds.

INSTRUCTIONS FOR TAKING METEOROLOGICAL OBSERVATIONS,
WITH REMARKS ON THE USE OF INSTRUMENTS.

WITH REMARKS ON THE USE OF INSTRUMENTS

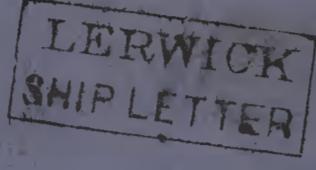
To

Mr ALEXANDER BUCHAN

Secretary of the Meteorological Society of Scotland,

EDINBURGH.

BOOK-POST



. Have the goodness also to state any information you may be able to collect relative to the Crops of Grim, Hay, Potatoes, Turnips, Peas, etc., whether plentiful, or in perfect condition; whether any have suffered from blight, disease, etc. Whether Lepidopterous insects prevail among cattle; and the Agricultural condition of the district generally.

FOREST TREES.	Alder,	Ash,	Birch,	Elm,	Larch,	Lime,	Oak,	Sycamore or Plane,
Flowers.	Tear Hand	Flowers.	In Leaf,	Divesled of	Leaves.	Flowers.	Leaves.	Flowers.
First Cut	or Flowers.	First Cut	or Flowers.	above Ground	above Ground	above Ground	above Ground	above Ground
CROPS.	Barey,	Bere or Biggs,	Oats,	Wheat,	Beans,	Pease,	Turmps,	Hay Grass,
Soilings or								
meadowing, wildry.								
In Leaf,								
Apperating								
above Ground								
or Flower,								
First Cut								
SHRUBS, ETC.	Barberry,	Bourtree or Elder,	Broom,	Cherry,	Clouko,	Culewe,	House-Swallow,	House-Swallow,
First in	Apple,	Black Currant,	Cherry,	Cherry,	Cherry,	Cherry,	Cherry,	Cherry,
Blosom.								
MIGRATORY BIRDS.	Fruit in	Blosom,	Blosom,	Blosom,	Blosom,	Blosom,	Blosom,	Blosom,
First								
Departure.								
HOLLY,	Hazel,	Hawthorn,	Broom,	Cherry,	Clouko,	Culewe,	House-Swallow,	House-Swallow,
HOLLY,	Hazel,	Hawthorn,	Broom,	Cherry,	Clouko,	Culewe,	House-Swallow,	House-Swallow,
LAMBURUM,	LILAC,	SWAN,	CHERRIES,	GEESEN,	LAPWING,	PILOVER,	GOOSEBERRY,	STRAWBERRY,
MOUNTAIN ASH OR HOLLOWAN,	MOUNTAIN ASH OR HOLLOWAN,	RED FLOWERING CURRANT,	PEACHES,	PEARS,	STARLING,	SAND-MARTIN,	PLUM,	RAIL OR CORN CRAKE,
WHIM,	WHIM,	RHODODENDRON PONTICULUM,						