

He loft fight of it in a cloud, not above 20 degrees above the fouthern part of the horizon, into the middle of which it enter'd : but a friend of his, being about 4 miles more fouthward, faw it again, after it came out of this cloud, till it enter'd into another.

The exceffive hot weather in the preceding part of the month of July, epecially on Wednesday the 11th day thereof, which is fuppofed to have been the hotteft day we have had for many years in England, may perhaps account, in fome meafure, for the generation of this fiery meteor.

I intirely fubmit to you, whether it deferves to be taken notice of by the Royal Society, among the extraordinary phenomena of the year 1750 ; and am, with the greateft refpect,

S I R,

Your moft obedient humble fervant,

Catharine-ftreet, Dec. 12.
1750.

H. Baker.

III. Thermometrical Tables *and* Observations,
in a Letter to John Pringle M. D. &
F. R. S. by John Stedman M. D.

S I R,

Read Jan. 10.
1750.

I ACQUAINTED you fome time fince of having kept a journal of the weather in the camp, whilft I attended the army in the Netherlands ; and that, having given particular attention

tention to the thermometer, I found, that the heat in tents was remarkable for its degree, sudden and great vicissitudes, and almost continual variation from the state of the open air. As a specimen of this, and in compliance with your desire, I have sent you a table of my observations on this subject, during our incampment in Dutch Brabant, in the last year of the war.

It will be proper to observe, that, to keep the thermometers, placed in the open air, from the direct rays of the sun, it was necessary to suspend them so low, that the reflexion of heat from the earth must sometimes have rais'd the Mercury higher, than would have happen'd, had the instruments been remov'd farther from the ground; and it must also be remember'd, that, for some days of this season, the weather was uncommonly warm.

In keeping this journal, I observ'd,

1. That, in tents, the heat frequently varies 20, 25, and sometimes 30 degrees in twenty-four hours; reckoning by Fahrenheit's scale.

2. That the uneasiness, felt upon great changes of heat and cold, depends more upon the sudden change from the one to the other, than upon the excess of either; having often seen, in a long course of sultry weather, men sitting unconcernedly in their tents, when the air they breath'd in was rais'd to about 90 degrees; and the same men in winter standing in the open air with no warmer cloaths, and yet without any complaint, tho' the cold was some degrees below the freezing point. Whence it appears, that, if such a change of air be gradual, the same person can, without any uneasy sensation,
bear

bear the difference of 60, 62, or 64 degrees of heat.

3. That we are able to endure a greater degree of heat, than what has been hitherto thought enough to kill animals, as will appear from the following example :

A soldier being confin'd to a tent call'd the stand-guard, while the weather was so extremely hot, that the thermometer rose within the tent 103 or 104 degrees *; on the second day his pulse was quick and full, his mouth foul, and he complain'd of thirst, a nausea, and head-ach. A thermometer being then kept for some time in his arm-pit, rose to 106 degrees. On the third day all the symptoms increased; tho' the thermometer applied to his body, rose no higher than the day before: but, upon my representing the danger from the heat, he was enlarged, and thereupon immediately recover'd.

The heat in this instance was several degrees beyond what the learned professor Boerhaave thought sufficient to coagulate the blood.

4. That a damp air (*cæteris paribus*) gives a sensation of greater heat or cold than a dry air; *viz.* a sensation of greater heat, when the Mercury is about 70 degrees or upwards; and of cold, when about 50 degrees, or below that point.

5. That we are able to endure the open air, when heated to a degree considerably greater than the air of a room, that is heated by a fire: and, since one may stay some hours in a bagnio, where the heat is

* By Fahrenheit's scale.

is at 100 degrees †, we may conclude, that the open air, heated to that degree, will be suffer'd with less uneasiness, than when it is so confined.

6. That medicines, for whose operation a pretty high degree of heat is necessary, cannot be taken safely, where the heat is very variable, tho' it should not be less than the degree requisite for the working of such medicines. Thus a mercurial salivation may be carried on safely, where the heat is kept from 66 to 72 degrees; but, were the heat suddenly to vary 15 or 20 degrees, the change would be dangerous, tho' the heat was not to fall below 66 degrees.

7. That the body is sometimes differently affected, according to the different constitutions of the air; tho' the air remains the same, so far as we can judge, with regard to heat, humidity, and gravity.

8. That, when the thermometer is high, our bodies are very sensible of a small addition of heat: but it is uncertain, whether this proceeds from the heat being near the greatest degree we can bear; or, that a greater proportion of heat is requisite to raise the thermometer the same number of degrees after it is high, than when it is low. If this be the case, then, in graduating the thermometers, the degrees ought to be marked shorter, proportionally to the height of the mercury; but in what proportion, is not yet discovered. I am, &c.

Edinburgh, Oct. 3.
1750.

TABLE of HEAT.
Campaign 1748.

Months. N. S.	Days.	Hours.		Deg. <i>Fahrenb.</i>			R. Societ. Therm.	<i>Edinb.</i> Therm.
		<i>A. Mer.</i>	<i>P. Mer.</i>	Officers Tent.	Open Air.	Soldiers Tent.		
<i>April</i>	10	6		48	42	44	65	10.4
			2	59	56	62	45	13.5
			10	47	40	42	68	10.
	11	5		38	34	34.	76	8.5
			1	52	52	58	51	12.6
			11	42	39	39	69	9.8
	12	7		44	44	44	63	10.8
			1	52	50	61	54	12.1
			11	50	47	47	58	11.6
	13	6		40	36	36	73	9.
			1	62	58	67	43	13.9
			11	40	35	35	75	8.8
	14	5		41	34	34	76	8.5
			3	70	67	72	30	15.8
	16	7		57	52	56	51	12.6
			1	70	65	70	33	15.2
			10	52	49	49	56	11.9
	17	7		38	34	34	76	8.5
			2	47	46	52	60	11.2
			11	40	37	37	73	9.3

Months.

Months. N. S.	Days.	Hours.		Deg. ⁵ / ₁₀ Offcets Tent.	Fahren.		R. Societ. Therm.	Therm. ⁵ / ₁₀ Fahren.
		A. Mer.	P. Mer.		Open Air.	Soldiers Tent.		
<i>April</i>	19	6		40	40		68	10.
			2	48	42		66	10.4
			10	41	38		71	9.5
	20	7		39	32	33	79	8.2
			1	61	58	67	43	13.9
			11	40	38	37	71	9.5
	21	7		47	40	42	68	10.
			11	48	44	45	62	10.8
			10	40	38	40	71	9.5
	22	8		40	37	37	73	9.2
			2	52	50	59	53	12.1
			11	38	34	34	76	8.6
	23	8		40	40		68	10.
			1	51	48		57	11.7
	24	7		40	37	38	73	9.2
			2	50	47	50	58	11.6
			11	42	37	39	73	9.2
	26	7		46	42		65	10.4
			1	51	49		56	11.9
	27	6		40	36	36	74	9.
		1	40	40	38	68	10.	
		7	42	42	38	65	10.4	
		11	40	37	37	73	9.2	

Months N. S.	Days.	Hours.		Deg. <i>Fahrenh.</i>			R. Societ.	<i>Emb.</i>
		<i>A. Mer.</i>	<i>P. Mer.</i>	Officers Tent.	Open Air.	Soldiers Tent.	Therm.	Therm.
							Open Air.	
<i>April</i>	28	7		54	42	44	65	10.4
		11		48	45	48	63	11.
			8	42	38	42	71	9.5
	29	6		42	33		78	8.4
		11		49	42		65	10.4
			5	47	38		71	9.5
	30	6		46	32		79	8.3
		11		52	40		68	10.
			9	50	48		57	11.7
			11	47	44		62	10.8
<i>May</i>	1	7		46	47	47	58	11.5
			1	47	47	47	58	11.5
			10	44	40	42	68	10.
	2	7		49	47	53	58	11.5
		11		60	64	64	34	15.1
			10	48	44	47	62	10.8
	3	8		56	54		49	13.
			1	60	56		46	13.4
			10	48	44		62	10.8
	4	8		66	64		34	15.1
			1	74	78		15	18.1
			10	56	54		49	13.
	5	8		64	64		34	15.1

Months

Months. N. S.	Days.	Hours.		Deg. <i>Fahrenh.</i>			R. Societ.	<i>Edinb.</i>
		A. Mer.	P. Mer.	Officers Tent.	Open Air.	Soldiers Tent.	Therm.	Therm.
							Open Air.	
<i>May</i>	5		1	76	82		9	19.
			11	64	62		37	14.6
	6	8		63	60	63	40	14.2
			2	63	62	63	37	14.6
			11	56	56	56	46	13.4
	7	8		60	56	58	46	13.4
			10	53	50		54	12.1
	8	7		64	62		37	14.6
			1	69	78		15	18.1
	9	2		59	57		45	13.7
		8		59	56		46	13.4
			2	66	66		32	15.5
			3	64	72	76	23	16.8
			11	52	54		48	13.
	10	8		59	72	64	23	16.8
			3	64	58	64	43	13.8
	11	2		53	53		50	12.7
		8		69	69	72	27	16.2
			1	83	83		8	19.2
			3	79	78		15	18.1
		4	87	88	90	1	20.3	
		5	77	76	76	17	17.7	
		10	64	62		37	14.6	

Months. N, S.	Days.	Hours.		Deg. <i>Fahrenh.</i>			<i>Edmh.</i>	
		<i>A. Mer.</i>	<i>P. Mer.</i>	Officers Tent.	Open Air.	Soldiers Tent.	R. Societ. Therm.	Therm. Open Air.
<i>May</i>	14	8		72	70		26	16.5
			1	83	84		6	19.5
			10	78	76		17	17.7
	18	8		68	68	68	28	16.1
			1	76	84	83	6	19.5
			10	80	78	78	15	18.1
	20	8		64	60	64	40	14.2
			1	66	65	65	33	15.3
			5	72	68	74	28	16.1
			7	64	64	64	34	15.1
			10	58	57	57	45	13.7
	21	8		70	72		23	16.8
			1	82	80		12	18.6
			11	67	68		28	16.1
	22	8		70	72		23	16.8
			1	88	86		4	19.9
			11	56	55		47	13.3
	23	8		72	72		23	16.8
			1	66	64		35	15.1
			11	56	55		47	13.3
	24	8		56	56	56	46	13.4
			2	65	64	64	35	15.1
			4	54	54	54	48	13.

Months.

Months. N. S.	Days.	Hours.		Deg. <i>Fahrenh.</i>			R. Societ. Therm.	<i>Famb.</i> Therm.	
		<i>A. Mer.</i>	<i>P. Mer.</i>	Officers Tent.	Open Air.	Soldiers Tent.			Open Air.
<i>May</i>	24		11	48	48	48	57	11.7	
	25	7		56	54		48	13.	
			1	56	55		47	13.3	
			11	49	48		57	11.7	
	26	8		60	68		29	16.	
			1	64	70		26	16.5	
			10	57	56		46	13.4	
	27	8		57	59		42	14.1	
			1	73	72		23	16.8	
			11	61	60		40	14.3	
	28	7		72	74	74	20	17.2	
			1	83	85	90	5	19.6	
			11	59	59	59	42	14.1	
	29	8		79	79		13	18.5	
			11		92	86	94	4	19.9
			1	95	92	98	5	21.2	
			10	79	66	67	32	15.5	
	30	8		87	85		5	19.6	
			2	96	94	101	8	21.5	
			10	74	72	72	23	16.8	
	31	7		73	73		22	17.	
			1	84	80		12	18.6	
			10	69	60	69	28	16.2	

Months.

Months. N. S.	Days.	Hours.		Deg. <i>Fahrenh.</i>			R. Societ. Therm.	<i>Edinb.</i> Therm.
		<i>A. Mer.</i>	<i>P. Mer.</i>	Officers Tent.	Open Air.	Soldiers Tent.		
<i>May</i>	31		11	69	63		36	14.8
	<i>June</i>	1	7		73	72		23
			2	92	86	94	4	19.7
			10	72	70	70	26	16.5
	2	8		88	88		1	20.3
			2	96	94	100	8	21.6
			10	72	70	70	26	16.5
	3	8		70	72		23	16.8
			2	79	78		15	18.4
			11	64	60		40	14.3
	4	7		64	64		35	15.1
			1	71	70	81	26	16.5
			11	62	62	62	37	14.6
	5	8		64	64		35	15.1
			1	74	68		29	16.
			10	62	62		37	14.6
	6	5		56	56	58	46	13.4
			2	88	84	94	6	19.5
	8	7		78	72	78	23	16.8
			1	88	79	90	13	18.5
			5	94	80	92	12	18.6
			10	64	62	62	37	14.6
	9	9		81	84	84	15	18.1

Months.

Months. N. S.	Days.	Hours.		Deg. Fabrenh.			R. Societ. Therm.	Edmb. Therm.	
		A. Mer.	P. Mer.	Officers Tent.	Open Air.	Soldiers Tent.			Open
June	9		4	88	82	90	9	19.	
			10	64	62	62	37	14.6	
	10	7		78	76		18	17.7	
	11	9		64	61	62	39	14.4	
				1	72	70	76	26	16.5
				10	64	62	62	37	14.6
	12	8		64	62		37	14.6	
				2	67	66		32	15.5
				10	64	63		36	14.8
	13	8		67	66		32	15.5	
				1	85	82	90	9	19.
	14	1		64	62	62	37	14.6	
				9	65	65		33	15.3
				1	92	88	95	1	20.3
				11	66	66	66	32	15.5
	15	8		64	64	67	35	15.1	
				1	89	88	92	1	20.3
			10	64	62	62	37	14.6	
16	8		64	64		35	15.1		
			1	74	74		20	17.4	
			10	64	64		37	14.6	
17	5			60	58		43	13.8	
			1	72	72		23	16.8	

Months.

Months. N. S.	Days.	Hours.		Deg. Fahrenh.			Edinb. Therm.	
		A. Mer.	P. Mer.	Officers Tent.	Open Air.	Soldiers Tent.	R. Societ. Therm.	Open Air.
June	17		11	66	64		35	15.1
	18	8		88	88	91	1	20.3
			2	98	95	100	10	21.7
			10	88	88	88	1	20.3
	20	8		86	82		9	19.
			1	94	92	97	5	21.2
			10	76	76		18	17.7
	21	8		87	86		4	19.9
			1	96	94	98	8	21.6
			10	87	80		12	18.6
	22	8		88	82		9	19.
			1	100	92	100	5	21.2
			11	84	84		6	19.5
	23	7		82	84	87	6	19.5
		9		97	90	99	2	20.6
			2	96				
			10	88	84	84	6	19.5
	24	7		87	84		6	19.5
			1	90	86	93	4	19.9
			2	94	87	97	3	20.1
			4	72	70	70	26	16.5
	25	2		64				
		7		70	70		26	16.5

Months.

Months. N. S.	Days.	Hours.		Deg. ⁵⁰ <i>Fahrenb.</i>			R. Societ. Therm.	<i>Edinb.</i> Therm.
		<i>A. Mer.</i>	<i>P. Mer.</i>	Officers Tent.	Open Air.	Soldiers Tent.		
<i>June</i>	25		1	88	84	90	6	19.5
			10	74	72	72	23	16.8
	26	7		70	68	68	29	15.9
			1	76	72	78	23	16.8
			11	70	70		26	16.5
	27	7		90	87	92	3	20.1
			1	96	90	99	2	20.6
			4	73	70	72	26	16.5
			10	73	68	68	29	15.9
	28	6		67	64		34	15.1
		1	90	87	92	2	20.	
		10	78	74	74	21	17.2	
<i>July</i>	2	6		61	60	61	40	14.2
			1	72	70	70	26	16.5
			11	64	62		37	14.6
	5	8		67	64		34	15.1
			2	79	80	76	12	18.6
			10	64	62		37	14.6
	8	5		63	60	62	40	14.2
			2	100	90	102	2	20.7
			11	67	61	63	39	14.4
	12	6		72	70	70	26	19.5
		1	83	76	84	18	17.7	

Months. N. S.	Days.	Hours.		Deg. <i>Fahrenh.</i>			R. Societ. Therm.	<i>Edinb.</i> Therm.
		<i>A. Mer.</i>	<i>P. Mer.</i>	Officers Tent.	Open Air.	Soldiers Tent.		
<i>July</i>	12		11	69	62	63	37	14.6
	13	7		72	64		34	15.1
			I	83	73		19	17.5
			10	69	61		39	14.4
	16	7		67	63	66	36	14.8
			I	88	82	94	9	19.
			11	74	67	70	30	15.7
	19	8		72	68	68	29	16.
			2	72	66	67	32	15.5
			8	69	64	64	34	15.1
			11	58	54	57	48	13.
	23	6		68		78		
		11		72		88		
			10	64		60		
	28	8		72		79		
			I	78		93		
		11	70		66			
30	7		67		72			
	11		80		98			
<i>August</i>		11	70		67			
	2	7		64		59		
			I	73		86		
			11	66		56		

Months.

Months. N. S.	Days.	Hours.		Deg. Fabrenh.			Edinb. Therm.	R. Societ. Therm.	Open Air.
		A. Mer.	P. Mer.	In a Houfe.		Soldiers Tent.			
<i>August</i>	4	8		69		69			
				I	75		97		
	5	6			68		70		
				I	78		92		
				II	73		64		
	7	6			68		61		
				2	69		60		
				II	62		60		
	8	7			69		70		
				I	80		96		
				IO	74		66		
		12	5		63		61		
				I	74		86		
				IO	70		66		

From *July* 23d, the Observations were taken in a Houfe, and a Soldier's Tent.