

MISCELLANEOUS PHENOMENA.

Meteors.—Rio Vista, Cal., 20th, 10.25 p. m., very brilliant, making the smallest objects distinctly visible for several seconds; its light was much brighter than that of the full moon. Morrison, Ill., 8th. New Corydon, Ind., 8th. Cedar Rapids, Ia., 2d. Yates Centre, Kan., 3d, 10.15 p. m., moving with a slow uniform motion towards the S., color, pale yellow and as bright as Jupiter, path about 20°, no tail or explosion. Fallston, Md., 10th, 8 p. m., very large and brilliant, path S. to N. The light was sufficiently brilliant to cast distinct shadows. Some persons reported the occurrence of a loud explosion, resembling that of a distant powder mill; the meteor finally burst into many fragments. Dexter, Me., 6th, bright. Woodstock, Md., 2d; 10th, very brilliant, exploded like a rocket; 23d, 27th. Fall River, Mass., 26th, 6.30 p. m. Rowe, Mass., 14th. Proteum, Mo., 11th, 7 p. m., about the size of Jupiter, started near the zenith and shot toward the western horizon; 23d, 7.30 p. m., apparently double the size of Jupiter; when first observed it was a few degrees S. of zenith and pursued a southerly course; before disappearing a portion of it separated from the main body and shot upward; a small and beautiful blaze followed in its track; no report was heard. Vineland, N. J., 15th. Palermo, N. Y., 10th. Waterburg, N. Y., 3d. Elsworth, N. C., 10th. Flemington, W. Va., 11th. Des Moines, Ia., 4th, 4.15 a. m., first appeared near horizon and passed from W. to E.; it resembled a large ball of fire; objects in vicinity were rendered clearly visible; the light lasted about 3 seconds. A few persons, residing in Boone and Greene counties, stated that they were awakened by a loud report, as of a ten pound cannon. The meteor was reported to have been seen in several other counties. Fort Bayard, N. Mex., 6th. Sacramento, Cal., 20th, 10.20 p. m., very brilliant; seen through the clouds, it gave a purple light; no noise or explosion.

Zodiacal Light.—New Haven, 14th, 15th, 18th; Nashville, 4th, 5th, 6th, 9th, 10th, 11th, 17th; St. Vincent, Minn., 4th, 14th; Springfield, Ill., 3d, 5th, 6th, 8th, 14th; Dayton, Wash. Ty., 6th, 10th, 17th, 18th; New Corydon, Ind., 5th, 8th, 9th, 10th, 14th, 15th; Spiceland, Ind., 14th; Wabash, Ind., 5th, 15th; Clinton, Iowa, 7th, 8th, 9th, 14th, 15th, 16th; Cresco, Iowa, 7th, 8th, 13th; Monticello, Iowa, 1st, 9th, 10th, 13th, 15th; Dana, Iowa, 7th, 8th, 9th, 12th, 13th, 14th, 15th; Cedar Rapids, Iowa, 14th, 15th; Yates Centre, Kan., 4th, 5th, 7th, 8th, 9th, 11th, 12th, 13th, 16th; Cornish, Me., 11th, 14th, 18th; Sandy Springs, Md., 8th; Cambridge, Mass., 15th, 24th; Somerset, Mass., 6th, 8th, 10th, 11th, 15th, 17th, 18th; Rowe, Mass., 14th; Northport, Mich., 17th; Northfield, Minn., 8th, 9th, 13th, 14th, 16th; Freehold, N. J., 10th, 18th; Atlantic City, N. J., 6th, 7th, 8th, 10th, 11th, 14th, 15th, 17th, 18th; Waterburg, N. Y., 6th, 13th, 14th, 15th; Elsworth, N. C., 10th, 11th; Bellefontaine, Ohio, 4th, 5th, 6th, 14th, 16th; Albany, Or., 17th, 18th; Dyberry, Pa., 5th, 10th; New Ulm., Tex., 12th; Wytheville, Va., 6th, 10th, 11th.

Migration of Birds.—*Geese flying southward:* Dana, Ia., 15th; Delaware Breakwater, 2d; Castroville, Tex., 18th; Indianapolis, Ind., 21st; Rapid City, Dak., 12th; Sacramento, Cal., 5th. *Flying northward:* Hector, N. Y., 27th; Bellefontaine, O., 12th; Austin, Tenn., 9th; Elmira, Ill., 12th; Clinton, Ia., 10th, 12th; Fort Madison, Ia., 7th, 8th, 23d, 24th; Monticello, Ia., 11th, 12th; Dana, Ia., 28th; Independence, Kan., 14th, 18th; Yates Centre, Kan., 5th; Proteum, Mo., 28th; Clear Creek, Nebr., 3rd; Genoa, Nebr., 28th; Delaware Breakwater, 7th, 13th; Erie, Pa., 28th; Cairo, Ill., 16th; Omaha, Nebr., 6th, 27th; Red Bluff, Cal., 8th, 9th. *Ducks flying northward:* Charleston, Ill., 6th., Des Moines, Ia., 10th, 11th; Genoa, Nebr., 28th; Fort Gibson, 19th; Indianola, Tex., 20th, 23d; Morgantown, W. Va., 18th. *Flying southward:* Charleston, Ill., 21st. *Pigeons flying northward:* Guttenburg, Ia., 10th.

Prairie and Forest Fires.—Ft. Gibson, Ind. Ty., 10th, 11th, 12th; Ft. Stevenson, Dak., 5th, 8th, 10th, 11th; Bismarek, Dak., 13th, 14th; Yankton, 5th, 6th, 7th, 8th, 9th, 14th; Hu-

ron, Dak., 6th, 7th, 8th, 10th, 15th, 16th; Deadwood, Dak., 28th; Dodge City, 6th; Ft. Supply, Ind. Ty., 5th, 6th, very extensive, 12th; Ft. Hall., Dak., 6th; Proteum, Mo., 5th; Genoa, Neb., 3d to 15th; Wellington, Kan., 12th to 16th.

Polar Bands.—Punta Rassa, Fla., 5th; Nashville, Tenn., 12th; Ft. Stevenson, Dak., 9th, 11th; Florence, Ariz., 6th; Sacramento, Cal., 22d; New Corydon, Ind., 1st to 6th, 8th, 18th, 25th; Yates Centre, Kan., 10th, 12th, 13th; Vineland, N. J., 2d, 3d, 11th, 14th, 17th, 18th; Woodstock, Vt., 2d, 8th, 23d; Wytheville, Va., 2d, 17th, 18th.

Earthquakes.—Pagosa, Springs, Col., 11th, 1.30 a. m., heavy shock. San Geronio, Cal., 3d, 2.40 a. m., sharp shock, shaking the house and rattling the windows; direction apparently from S. to N., duration about 30 seconds.

Sand Storms.—Stockton, Tex., 7th, 27th; Yuma, Ariz., 6th, 17th; Camp Thomas, Ariz., 11th, 14th, 17th; Umatilla, Or., 14th, 15th, 16th; Ft. Cummings, N. M., 27th.

Sunsets.—The characteristics of the sky as indicative of fair or foul weather for the succeeding twenty-four hours, have been observed at all Signal Service stations. Reports from 187 stations show 5,177 observations to have been made, of which 27 were reported doubtful; of the remainder, 5,150, or 84.7 per cent., were followed by the expected weather.

Sun Spots.—The following record of observations has been forwarded by Mr. D. P. Todd, Director of the Lawrence Observatory, Amherst, Mass.:

| DATE— Feb., 1882. | No. of new | | Disappear'd by solar rotation. | | Reappear'd by solar rotation. | | Total No. visible. | | REMARKS. |
|----------------------|------------|-------|--------------------------------------|-------|-------------------------------------|-------|-----------------------|-------|----------|
| | Gr'ps | Spots | Gr'p | Spots | Gr'ps | Spots | Gr'ps | Spots | |
| 1, 11 a. m. | 1 | 4 | 1 | 6 | 1 | 4 | 4 | 18† | |
| 2, 9 a. m. | 0 | 0 | 1 | 3 | 0 | 0 | 3 | 13 | |
| 3, 11 a. m. | 1 | 5 | 0 | 0 | 0 | 0 | 4 | 20† | |
| 6, 10 a. m. | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 35† | |
| 8, 5 p. m. | 0 | 5 | 0 | 0 | 0 | 0 | 3 | 85† | |
| 10, 11 a. m. | 1 | 10 | 0 | 0 | 0 | 0 | 4 | 50† | |
| 11, 11 a. m. | 2 | 10 | 0 | 0 | 1 | 3 | 6 | 60† | |
| 12, 12 m. | 0 | 0 | 0 | 3 | 0 | 0 | 6 | 55† | |
| 14, 12 m. | 1 | 10† | 1 | 5 | 1 | 2 | 6 | 60† | |
| 15, 11 a. m. | 0 | 5 | 0 | 5 | 0 | 5 | 6 | 60† | |
| 16, 11 a. m. | 0 | 0 | 1 | 5 | 0 | 0 | 5 | 53† | |
| 17, 11 a. m. | 0 | 0 | 1 | 10 | 0 | 0 | 4 | 45† | |
| 18, 11 a. m. | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 30† | |
| 20, 11 a. m. | 1 | 5 | 0 | 5 | 1 | 5 | 4 | 20† | |
| 23, 11 a. m. | 1 | 5 | 0 | 0 | 0 | 0 | 4 | 25† | |
| 24, 10 a. m. | 0 | 0 | 1 | 5 | 0 | 0 | 3 | 20† | |
| 25, 4 p. m. | 1 | 5 | 0 | 5 | 0 | 0 | 4 | 20† | |
| 26, 4 p. m. | 0 | 0 | 1 | 4 | 0 | 0 | 2 | 16† | |
| 27, 10 a. m. | 1 | 1 | 0 | 0 | 1 | 1 | 2 | 10 | |

†Approximated. Faculae were seen at the time of every observation.

Mr. William Dawson, of Spiceland, Ind., reports: 1st, 4 groups, 25 spots. 3d, 5 groups, 20 spots, one large spot east and one west. 5th, 4 groups, 20 spots; air very poor. 8th, 5 groups, 100 spots; air good. 13th, 6 groups, 36 spots; air very poor. 14th, 6 groups, 60 spots; air very good. 15th, 8 groups, 72 spots; air good. 25th, 4 groups, 14 spots; air good. Mr. David Trowbridge, at Waterburg, N. Y., reports: 11th, 7 groups, 24 spots; some groups and spots large. 14th, 5 groups, 16 spots; groups same as observed on 11th; two of the groups of the 11th have disappeared; facula in the west. 15th, 7 groups, 20 spots; one group appeared by rotation and one has divided into two; faculae in the west. 18th, 3 groups, 5 spots. 24th, 2 groups, 3 spots. 25th, 2 groups, 2 spots; the western group of 24th has gone out and a new one in the east has arisen. 27th, 2 groups, 3 spots; one group has just appeared by rotation. 28th, groups and spots same as on 27th. The following record of observations has been forwarded by Mr. A. S. Bender, Sacramento, Cal.: 7th, 11.30 a. m., 6 groups, 35 spots; 3 of the groups were of 2 spots each, 1 group of 3 spots, and possibly the other groups containing the great number of small spots may be but one. 10th, 12 m., and 11th 12 m., same as observed on 7th. 13th, 11.30 a. m., 7 groups, 35 spots; some of the spots very small. 14th, 1 p. m., 7 groups, 35 spots; 1 new group, 1 spot; 1 group disappeared. 15th, 1 p. m., 7 groups, 35 spots; light clouds prevented close observation. 16th, 2 p. m., 5 groups, 25 spots, not quite clear. 18th, 12 m., 3 groups, 12 spots; 1 group, 2 spots disappeared by rotation. 19th, 12 m., 3 groups, 8 spots, perhaps more; not quite

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| <p>clear. 21st, 1.30 p. m., 2 groups, 5 spots; 1 group, 1 spot disappeared by rotation. 22d, 12 m., 4 groups, 13 spots; 2 new groups, 2 spots, one of which probably appeared by rotation. 24th, 2 p. m., 3 groups, 10 spots; 1 group, 1 spot disappeared by rotation; not quite clear. 25th, 1 p. m., 1 group, 1 spot; 1 of the new, and a large dim group disappeared. 26th, 2.15 p. m., 1 group, 1 spot. 27th, 11.30 a. m., 3 groups, 5 spots; 1</p> | <p>group, 1 spot reappeared by rotation. One of the spots which appeared on the 22d, and disappeared on the 25th, has now reappeared, and each of the single spots has divided and become two. 28th, 12 m., 1 group, 1 spot; the 2 small groups are probably not gone, but may be hidden by light clouds while permitting the large new spot to be seen. Faculae visible on all clear days.</p> |
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