

pleasant results for many private individuals. Were a man seen peering rather inquisitively about the fortifications of the city, or taking notes or sketches of important positions, or attempting to draw out some communicative soldier on the merits of the mitrailleuse, he was apt to find himself, before many minutes had passed, in a very uncomfortable predicament. A quarter of an hour to take leave of this earth, and the attentions of a corporal's file is generally the fate that awaits such inquisitive strangers in Paris, to say nothing of the likelihood of being torn to pieces by an infuriated mob. Especially after the riots at Belleville, which were said to have been instigated by a Prussian informer, an eager hunt for spies and secret agents was instituted in all quarters of Paris. Several Germans, or foreigners who were suspected of being Germans, were hustled and beaten while quietly strolling on the Boulevards. One of these incidents affords the subject of an illustration copied in our Supplement. The usual termination of such brawls was that the police had to take such obnoxious persons into custody in order to save them from the violence of the mob.

ENROLLING THE NATIONAL GUARD.

Our illustration shows the scene in the *mairie* of the 13th arrondissement during the enrollment of the National Guard. This body of troops, levied in time of necessity, resembles in more than one particular the English militia. It consists entirely of civilians, who receive their military instruction from the regular drill-sergeants of the army. The National Guard was first raised on the 13th July, 1789, and was called into active service in 1813. During that and the following year, the guard distinguished itself in several engagements in a way that drew the highest encomiums from the military authorities; it also took a prominent part in the defence of Paris against the allies. After the peace which followed Waterloo the National Guard was disbanded, but was reorganised by a decree of the 11th January, 1852.

GENERAL COLSON.

General Colson, who was killed at Reichshoffen, was born in 1821, educated at St. Cyr, and entered the army in 1841. He was first attached to the staff, and served in this capacity in the Crimea, where he distinguished himself at Inkerman and on the occasion of the capture of the Malakoff. In return for his services he received the cross of an officer in the Legion of Honour. After the Crimean war he served in the Kabylean expedition on the staff of Gen. Renault, and afterwards in Italy as chief of staff of the first division of the third corps. In 1869 he was sent to St. Petersburg as military attaché to the French embassy, and accompanied a Russian expedition to the Caucasus. In 1863 he commanded the French division in Rome but was shortly afterwards recalled to occupy an important position in the war office. In 1868 he obtained the rank of general of brigade. At the time of his death he was attached to the staff of Marshal McMahon.

GENERAL BATAILLE.

General Bataille, the hero of Saarbruck, was educated for the military service at St. Cyr. In 1839 he entered the army and obtained the rank of captain in 1842. He subsequently served in Algeria, the training-school of all French officers, and distinguished himself under Canrobert in the expedition to Nemencbas, and in 1848 at the siege of Zaatcha. In 1850 he commanded the battalion of Turcos, and served as colonel in the Kabylean campaign. At the age of forty he obtained the rank of general of brigade, and as such commanded the first brigade of general Trochu's division in the Italian campaign. At Solferino he distinguished himself by his intrepidity and his generalship, which enabled him to rescue the fourth corps of his division. On his return to France Gen. Bataille was placed at the head of a brigade of infantry of the guard. In 1866 he became general of division, and took the command of the army of the Rhine.

GENERAL RAOULT.

General Raoult is one of the few officers of high rank in the French service who have raised themselves by their own merits from the ranks. He was made lieutenant in 1838, served his time in Africa, where he won the cross of the Legion of Honour, and obtained his captaincy. In the East he was attached to Gen. Bosquet's division before Sebastopol, where he attracted the admiration of the great Russian general Todleben by his skill in directing the works in the trenches. Gen. Raoult disappeared in the battle at Reichshoffen.

THE DORWIN FALLS.

For the sketch from which we print the Leggotype of the Dorwin Falls, on the first page of this issue, we are indebted to the Rev. M. Laverdière, of St. Jacques de l'Achigan. These falls are situated in the Township of Rawdon, one of the best water townships in Canada, having no less than four rivers running through it—the Quareau, the Rouge, the Blanche, and a branch of the St. Esprit. These streams are, however, too much obstructed by falls and rapids to be available for navigation, but they are richly stocked with trout. The village of Rawdon is about forty-two miles north from Montreal.

THE BATTLE OF WEISSENBURG.

The town of Weissenburg, or Wissembourg, as spelt in French, was formerly a free city of the German Empire. It is situated close to the frontier, on the Lauter, a tributary of the Rhine running into that river at or near Lauterburg. The town was ceded to France by the Treaty of Ryswick, and for six years—from 1719 to 1725—it was the residence of the unfortunate Stanislas Leszczyński, Duke of Lorraine and Elect King of Poland. It has more than once owed its selection for a battle-ground to the works with which its neighbourhood was furnished by Marshal Villars, in the reign of Louis XIV., after his conquest of Alsace. In 1705 the Marshal caused a series of redoubts and intrenchments to be constructed from the Geisberg—or, to use the French name, the "Mont du Pigeonnier"—which lies at the eastern entrance of the town, above the southern bank of the Lauter, as far as Lauterburg; and these lines have, time after time, been captured and recaptured. They were stormed more than once during the War of the Succession; and on Oct. 13, 1793, they were carried by the Austrians, under Prince Waldeck. The Germans, however,

held them only for a short time, as on Christmas Day of the same year they were retaken by the French; and since that time Weissenburg has enjoyed an interval of peaceful existence as the *chef lieu* of the department of the Bas-Rhin. It is distant twenty-seven miles, north-east, from Strasbourg, by the railway which passes through Hagnenau, seven miles from Weissenburg, and which there forms a junction with the main railway, the Great Eastern of France, leading to Lunéville, Nancy, Châlons, and Paris. The valley of the Lauter at Weissenburg forms a gorge which opens into the Rhenish plains to the south and to the Vosges to the west. About two miles and a half to the west, upon the road to Bitsche, is the hill called the Pigeonnier, which rises nearly 2000 ft. above the valley of the Lauter. The ground from Weissenburg to this peak for about half a mile rises gently; and then suddenly, at the bend to the right, which the road to Bitsche makes, the ascent becomes more steep, so that the road is winding. The road from the Col du Pigeonnier to Chimbach, runs through a woody country easily defended, crosses the forest of Mundat, and, after running rather more than a mile beyond, reaches the little village of Chimbach, which lies on high ground. The road then descends for more than a mile to Lembach; passes through the forest of Kutzenthal, lying in a small valley; and terminates at Bitsche, a fortress of great natural strength, twenty-five miles distant from Weissenburg. But the ground extending a few miles south of the Lauter towards Saverne and Hagnenau, is diversified with hills and woods, though not at all of a mountainous character. It was this tract of country, towards Neuweiler, Ingweiler, and Frischweiler on the western side, that was surreptitiously explored, on the 26th July by the reconnoitring party of Baden officers, with Lieutenant Winslow, led by Count Zeppelin, one of whom was killed, and two became captives to the French.

The action at Weissenburg on the morning of the 5th ult. though its consequences were momentous, was rather a surprise by overwhelming numbers, than a regular battle. A portion of Marshal McMahon's corps d'armée, two regiments of the Line, one of foot chasseurs, one of mounted chasseurs, and one of Turcos, under General Abel Donay, had encamped the night before close to Weissenburg. At daybreak next morning they were aroused by a violent cannonade from the hills of the Bienwald, on the opposite bank of the Lauter, whence they were attacked by a very superior German force. They fought obstinately during several hours. The Crown Prince and his Staff were on the left of the German line, the artillery was in the centre, and the columns of German troops were massed on the right. The French had but three guns at first, but they got some reinforcements by railway, and maintained a brave contest till two o'clock in the afternoon. General Abel Donay was killed by a shell; Brigadier Montmarie was wounded; there was great slaughter, and several hundred French soldiers, with eighteen officers, were taken prisoners; one gun was also taken. The French retired over the hill of the Pigeonnier, and made their way to Bitsche.

INFLUENCE OF SOUND UPON RAIN.

A French *savant* maintains that it is in our power to produce rain at any time when the wind is in the right direction and there are clouds of vapour in the sky. The proper direction of the wind must be determined for each place by experiment, and the condition of the sky must be studied before attempting to hasten a rain-fall by any particular sounds, such as the ringing of bells or the firing of cannon. During the siege of Sebastopol, as soon as the cannonading commenced, the sky was overcast, and a fine rain began to fall, which was sometimes followed by violent storms and whirlwinds.

As a consequence of the atmospheric changes, the mercurial column in the barometer commenced to vibrate, and it was possible to represent on a chart the exact state of the siege by giving the height of the barometer at all hours of the day. Whenever there was a truce of a few hours for the burial of the dead, the change in the height of the mercury at once indicated it.

It has been found that the explosions of powder magazines and the heavy blasts of mines, as well as the violent ringing of bells, have brought on a sudden fall of rain. In some instances the striking of a clock in the tower of a church indicated the exact hour of the commencement of the storm. Whether this was an accidental coincidence or attributable to cause and effect, it is difficult to say.

It was found by the same *savant* that of one hundred and thirty-three rain-falls seventy-six commenced at the sounding of the hour by the church clock; forty-two at the stroke of the half hour, eight at three quarters, and seven at the quarter.

In large cities the varieties of sounds produce opposite effects, and may neutralize each other, and it is difficult to study the phenomena; but in small towns, if we notice the commencement of the rain, it is said that it will coincide with the stroke of the clock.

The explanation given is, that the vapour of water is formed of myriads of globules similar to soap bubbles, which burst when the percussion of the air is excessive, and thus run to water and produce rain. When the sky is overcast with such vapour, if we fire a cannon the equilibrium is destroyed, the globules burst, and the rain falls. If, however, the sky is clear, the discharge of cannon cannot cause rain, as there is none in the sky to be made to fall—but the vibrations in the air may affect some distant place where the clouds are already charged with vapour.

During the Crimean war, in Italy, and in Bohemia, in 1866, it was observed that a rain-storm attended nearly every battle. At Solferino there was a heavy storm of hail and rain between 4 and 5 p. m., which obliged France to cease fighting, and thus probably saved the Austrian army.

M. L. Maout, who has studied this subject more than any other writer, recommends the systematic establishment of meteorological stations in communication with each other, to be provided with cannon of suitable calibre, and, when the wind is in the right direction, to hasten a rain-fall, or to drive the clouds to an opposite direction if a continuance of dry weather be desired.

He firmly believes that it is in our power to control the elements sufficiently to do all this. It is easy to criticise and find objection to the theory, but the best way would be to try the experiment. We read that in the present unhappy war in Europe the troops have suffered greatly from rain; and as the cannonading was kept up for nearly a week, there may be some connection between it and the condensation of moisture. The fact that great battles are often attended by rain has been observed since a remote antiquity, but no one has attempted to

draw any conclusion from this circumstance or to make any practical application of it. We also know that the guides in Switzerland interdict all talking, singing, or even whistling, when a party is ascending a mountain, as any sudden vibration in the air produced by the least sound is often sufficient to start an avalanche that could sweep away the whole company in a moment.

Professor Winlock is now engaged in photographing the sun on a plan which, so far as we know, has not before been put into practice. He uses a single lens object glass, 4 1/4 inches diameter, 40 feet focal length, of crown glass, made by Clark, and corrected for spherical aberration by means of an artificial star of homogeneous (sodium) light in the focus of a 5-inch collimator. The image of the sun is 4 1/4 in. in diameter. The tube of the telescope points to the North, and the image of the sun is thrown in by means of a reflector of plate glass. This glass is not roughened or blackened on one side, because when that was done the heat of the sun distorted the plane surface. The slit is at the object glass end of the telescope, and that position has the advantage that when it is thrown across no dust is shaken down on to the plate, as is apt to happen in the usual way of working. It seems also probable that this mode of photographing might be of advantage for the partial phases of an eclipse.

CHESS.

A Selection from Walker's "Chess Studies."

Philidor gives Atwood Q. R. for Q. B. P. and move. (This is the only game, extant in print, in which Q. B. P. is given instead of K. B. P.)

Before playing over, it will be necessary to remove White's Q. R. and Black's Q. B. P.

White—Philidor.

1. K. P. 2
2. K. B. P. 2
3. K. Kt. B. 3rd
4. K. B. Q. B. 4th
5. Q. B. P. 1
6. Q. P. 1
7. Q. B. takes P.
8. K. B. takes P. ch.
9. K. B. Q. Kt. rd
10. Q. Kt. Q. 2nd
11. Q. K. 2nd
12. K. R. P. 1
13. Q. takes B.
14. Castles (Q. R.)
15. Q. B. K. 3rd
16. K. B. Q. R. 4th
17. Q. K. 2nd
18. Q. Kt. P. 2nd
19. K. Kt. 2nd
20. Q. P. 1
21. K. B. Q. B. 2nd
22. Q. R. P. 2
23. K. B. Q. 3rd
24. R. Q. R.
25. K. to B. 2nd
26. K. B. takes P.
27. P. takes Kt.
28. R. Q. Kt.
29. Q. ch.
30. R. takes R. ch.
31. Q. ch.
32. Q. Q. R. 7th. ch.
33. K. B. Q. Kt. 5th
34. Q. B. K. B. 2nd
35. Q. Q. B. 3rd
36. K. takes Q.
37. K. takes B.
38. B. ch
39. K. to B. 2nd
40. Q. B. K.
41. K. P. 1
42. B. Q. Kt. 4th. ch.
43. K. to Kt. 2nd
44. P. takes Kt.
45. K. to R. 3rd
46. K. takes P.
47. K. takes R.

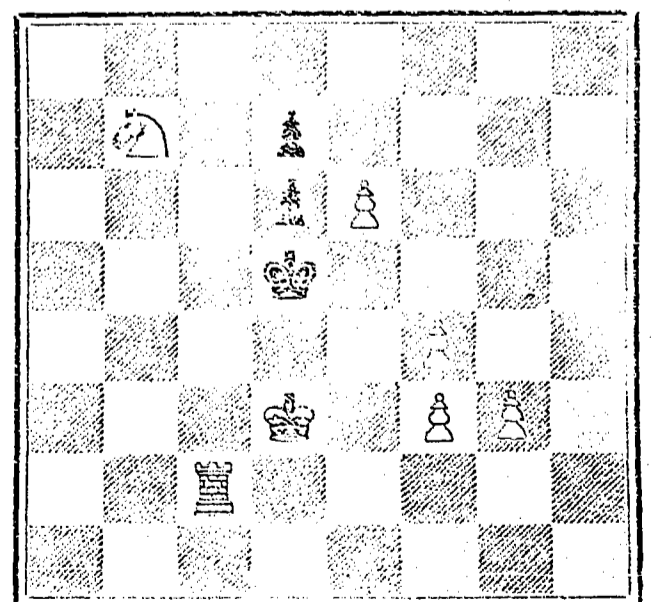
Black—Atwood.

- K. P. 2
- Q. P. 1
- B. pins Kt.
- Q. Kt. B. 3rd
- K. Kt. B. 3rd
- K. P. takes P.
- Q. Kt. 3rd
- K. K. 2nd
- Q. Kt. R. 4th
- Q. R. K.
- K. Q.
- B. takes Kt.
- K. B. K. 2nd
- K. R. B.
- Q. K. B. 2nd
- K. Kt. Q. 2nd
- Q. R. P. 1
- Q. Kt. B. 3rd.
- K. B. B. 3rd
- K. to B.
- Q. Kt. P. 2
- Q. Q. Kt. 2nd
- K. to B. 2nd
- Q. R. to Q. Kt.
- P. takes Q. R. P.
- Kt. takes Q. Kt. P. ch.
- Q. takes Q. Kt. P.
- Q. Q. R. 8th
- K. to Q.
- Kt. takes R.
- K. K. 2nd.
- Kt in.
- R. Q.
- B. K. Kt. 4th
- Q. takes Q. ch.
- B. takes Kt. ch.
- R. Q. R.
- K. to K.
- K. R. P. 1
- K. K. 2nd
- Q. P. 1.
- K. K. 3rd
- Kt. takes K. P.
- R. Q. Kt.
- R. takes B.
- R. takes B. ch.
- K. takes P. wins.

PROBLEM No. 17

By J. W.

BLACK.



White to play, and mate in four moves.

SOLUTION OF PROBLEM No. 16.

- White.
1. B. to K. R. 3rd
  2. Kt. to B. 8th
  3. Kt. mates.

- Black.
- B. takes R. (best)
  - Any move