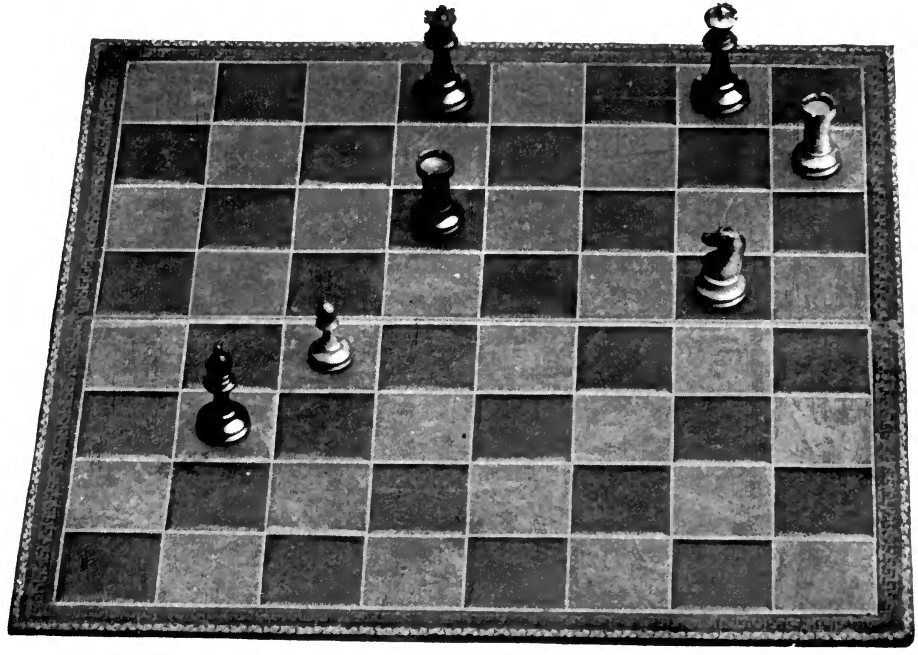

A COMPLEX TACTICAL PLANE.

THE

MAJOR TACTICS OF CHESS

A TREATISE ON EVOLUTIONS

THE PROPER EMPLOYMENT OF THE FORCES IN STRATEGIC, TACTICAL, AND LOGISTIC PLANES

BY

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PREFACE.

THIS, the second volume of the Chess Strategetics series, may not improperly be termed a book of chess tricks.

Its purpose is to elucidate those processes upon which every ruse, trick, artifice, and stratagem known in chess-play, is founded; consequently, this treatise is devoted to teaching the student how to win hostile pieces, to queen his pawns, and to checkmate the adverse king.

All the processes herein laid down are determinate, *and if the opponent becomes involved in any one of them, he should lose the game.*

Each stratagem is illustrative of a principle of Tactics; it takes the form of a geometric proposition, and in statement, setting and demonstration, is mathematically exact.

The student, having once committed these plots and counter-plots to memory, becomes equipped with a technique whereby he is competent to project and to execute any design and to detect and foil every machination of his antagonist.

BOSTON, 1898.

CONTENTS.

INTRODUCTORY.

WHEN you walked into your office this morning, you may have noticed that your senior partner was even more than ordinarily out of sorts, which, of course, is saying a good deal.

In fact, the prevailing condition in his vicinity was so perturbed that, without even waiting for a response, say nothing of getting any, to your very civil salutation, you picked up your green bag again and went into court; leaving the old legal luminary, with his head drawn down between his shoulders like a big sea-turtle, to glower at the wall and fight it out with himself.

Furthermore, you may recollect, it was in striking contrast that his Honor blandly regarded your arrival, and that it was with an emphasized but strictly judicial snicker that he inquired after the health of your venerable associate.

You replied in due form, of course, but being a bit irritated, as is natural, you did not hesitate to insinuate that some kind of a blight seemed to have struck in your partner's neighborhood during the night; whereupon you were astonished to see the judge tie himself up into a knot, and then with face like an owl stare straight before him, while the rest of his anatomy acted as if it had the colic.

Were you a chess-player, you would understand all this very easily. But as you do not practise the game,

and this is the first book you ever read on the subject, it is necessary to inform you that your eminent partner and the judge had a sitting at chess last night, and there is reason to believe that your *alter ego* did not get all the satisfaction out of it that he expected.

You have probably heard of that far-away country whose chief characteristics are lack of water and good society, and whose population is afflicted with an uncontrollable chagrin. These people have their duplicates on earth, and your partner, about this time, is one of them.

Therefore, while you are attending strictly to business and doing your prettiest to uphold the dignity of your firm, it may interest you to know what the eminent head of your law concern is doing. Not being a chess-player, you of course assume that he is still sitting in a profound reverie, racking his brains on some project to make more fame and more money for you both.

But he is doing nothing of the kind. As a matter of fact, he still is sitting where you left him, morose and ugly, and engaged in frescoing the wainscoting with the nails in his bootheels. Yet nothing is further from his mind than such low dross as money and such a perishable bauble as fame. At this moment he has but a single object in life, and that is to concoct some Machiavellian scheme by which to paralyze the judge when they get together this evening. This, by the way, they have a solemn compact to do.

Thus your partner is out of sorts, and with reason. To be beaten by the judge, who (as your partner will tell you confidentially) never wins a game except by purest bull luck, is bad enough. Still, your partner, buoyed up by the dictates of philosophy and the near prospect of revenge, — a revenge the very anticipation of

which makes his mouth water, — could sustain even that load of ignominy for at least twenty-four hours. But what has turned loose the flood-gates of his bile is that lot of books on the floor beside him. You saw these and thought they were law books; but they 're not, they are *analytical* treatises on chess, which are all right if your opponent makes the moves that are laid down for him to make, and all wrong if he does not. Your partner knows that these books are of no use to him, for the judge does n't know a line in any chess-book, and prides himself on the fact.

It seems that the judge, when he plays chess, prefers to use his brains, and having of these a fair supply and some conception of common-sense and of simple arithmetic, he has the habit, *à la Morphy*, of making but one move at a time, and of paying particular attention to its *quality*.

Thus, in order to beat the judge to-night, your partner realizes that he must get down to first principles in the art of checkmating the adverse king, of queening his own pawns, and of capturing hostile pieces. But in the analytical volumes which he has been strewing about the floor he can find nothing about first principles, or about principles of any kind for that matter. This makes your partner irritable, for he is one of those men who, when they want a thing, want it badly and want it quick. So if you are through with this book you had better send it over to him by a boy.

MAJOR TACTICS.

MAJOR TACTICS.

MAJOR TACTICS is that branch of the science of chess strategetics which treats of the evolutions appertaining to any given integer of chess force when acting either alone, or in co-operation with a kindred integer, against any adverse integer of chess force; the latter acting alone, or, in combination with any of its kindred integers.

An Evolution is that combination of the primary elements — time, locality and force — whereby is made a numerical gain; either by the reduction of the adverse material, or by the augmentation of the kindred body of chess-pieces.

In every evolution, the primary elements time, locality and force — are determinate and the proposition always may be mathematically demonstrated.

The object of an evolution always is either to checkmate the adverse king; or, to capture an adverse pawn or piece; or to promote a kindred pawn.

Grand Law of Major Tactics. — The offensive force of a given piece is valid at any point against which it is directed; but the defensive force of a given piece is valid for the support only of one point, except when the points required to be defended are all contained in the perimeter of that geometric figure which appertains to the supporting piece.

GEOMETRIC SYMBOLS.

All integers of chess force are divided into six classes; the King, the Queen, the Rook, the Bishop, the Knight and the Pawn.

Any one of these integers may properly be combined with any other and the principle upon which such combination is based governs all positions in which such integers are combined. This principle always assumes a form similar to a geometric theorem and is susceptible of exact demonstration.

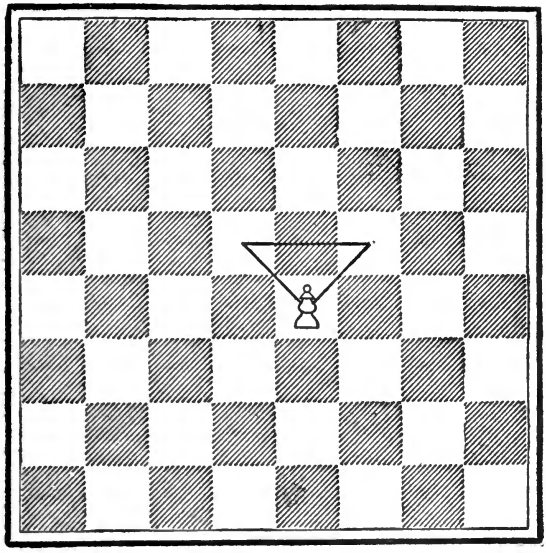
That geometric symbol which is the prime factor in all evolutions which contemplates the action of a Pawn is shown in Fig. 1.

This figure is an inverted triangle, whose base always is coincident with one of the horizontals of the chessboard; whose sides are diagonals and whose vertex always is that point which is occupied by the given pawn.

GEOMETRIC SYMBOL OF THE PAWN.

FIGURE 1.

Black.



White.

PRINCIPLE.

Given a Pawn's triangle, the vertices of which are occupied by one or more adverse pieces, then the pawn may make a gain in adverse material.

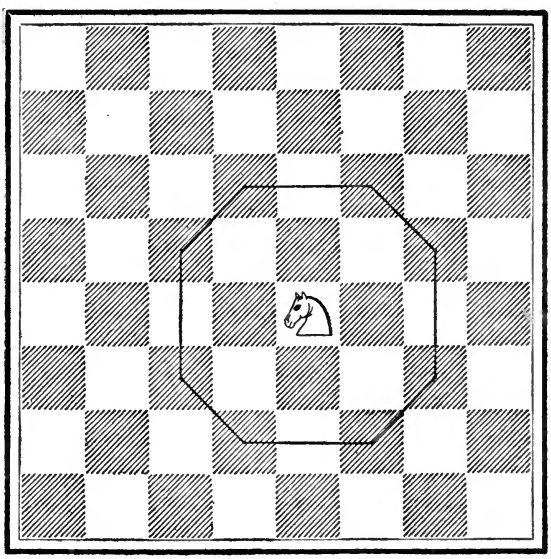
That geometric symbol which is the prime factor in all evolutions that contemplate the action of a Knight is shown in Fig. 2.

This figure is an octagon, the centre of which is the point occupied by the Knight and whose vertices are the extremities of the obliques which radiate from the given centre.

GEOMETRIC SYMBOL OF THE KNIGHT.

FIGURE 2.

Black.



White.

PRINCIPLE.

Given a Knight's octagon, the vertices of which are occupied by one or more adverse pieces, then the Knight may make a gain in adverse material.

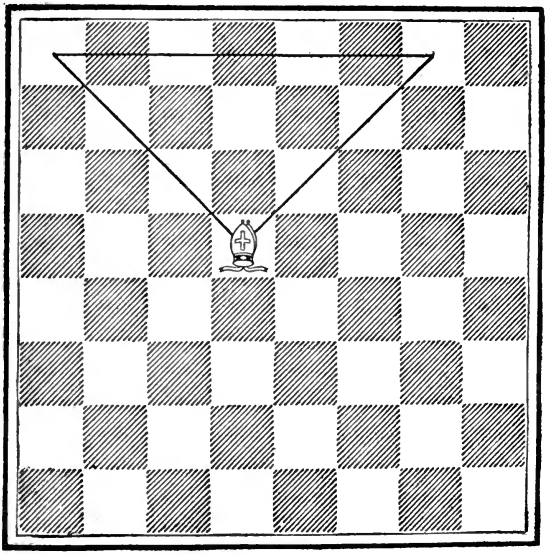
The geometric symbol which is the prime factor in all evolutions which contemplate the action of a Bishop is shown in Fig. 3.

This figure is a triangle, the vertex of which always is that point which is occupied by the Bishop.

GEOMETRIC SYMBOL OF THE BISHOP.

FIGURE 3.

Black.



White.

PRINCIPLE.

Given a Bishop's triangle, the vertices of which are occupied by one or more adverse pieces, then the Bishop may make a gain in adverse material.

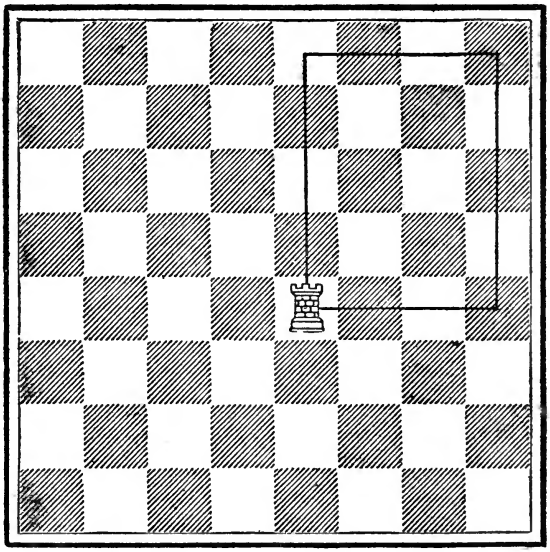
That geometric symbol which is a prime factor in all evolutions which contemplate the action of a Rook is shown in Fig. 4.

This figure is a quadrilateral, one angle of which is the point occupied by the Rook.

GEOMETRIC SYMBOL OF THE ROOK.

FIGURE 4.

Black.



White.

PRINCIPLE.

Given a Rook's quadrilateral, one of whose sides is occupied by two or more adverse pieces; or two or more of whose sides are occupied by one or more adverse pieces; then the Rook may make a gain in adverse material.

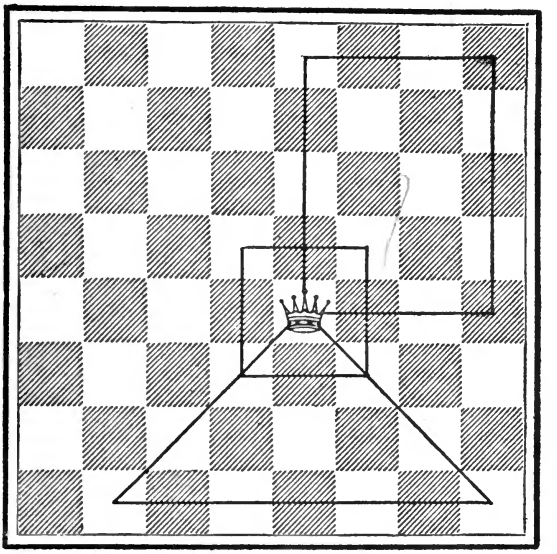
That geometric symbol which is a prime factor in all evolutions that contemplate the action of the Queen is shown in Fig. 5.

This figure is an irregular polygon of which the Queen occupies the common vertex.

GEOMETRIC SYMBOL OF THE QUEEN.

FIGURE 5.

Black.



White.

NOTE. — This figure is composed of a rectangle, a minor triangle, a major triangle, and a quadrilateral, and shows that the Queen combines the offensive powers of the Pawn, the Bishop, the Rook and the King.

PRINCIPLE.

Given one or more adverse pieces situated at the vertices or on the sides of a Queen's polygon, then the Queen may make a gain in adverse material.

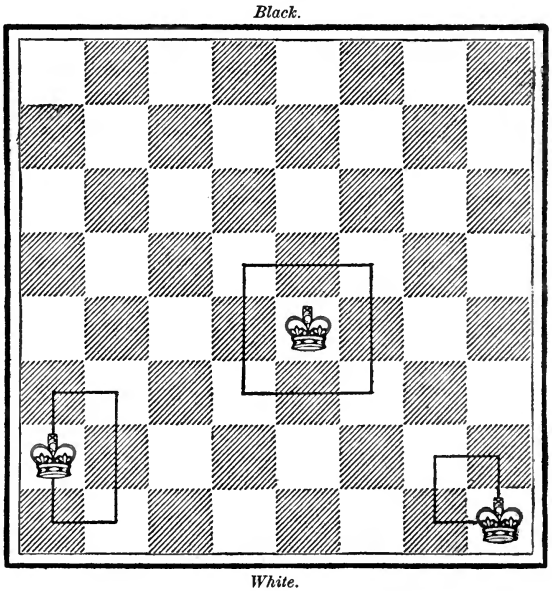
That geometric symbol which is the prime factor in all evolutions which contemplate the action of the King, is shown in Fig. 6.

This figure is a rectangle of either four, six, or nine squares. In the first case the King always is situated at one of the angles ; in the second case he always is situated on one of the sides and in the last case he always is situated in the centre of the given figure.

GEOMETRIC SYMBOL OF THE KING.

(*a.*)

FIGURE 6.



PRINCIPLE.

Given one or more adverse pieces situated on the sides of a King's rectangle, then the King may make a gain in adverse material.

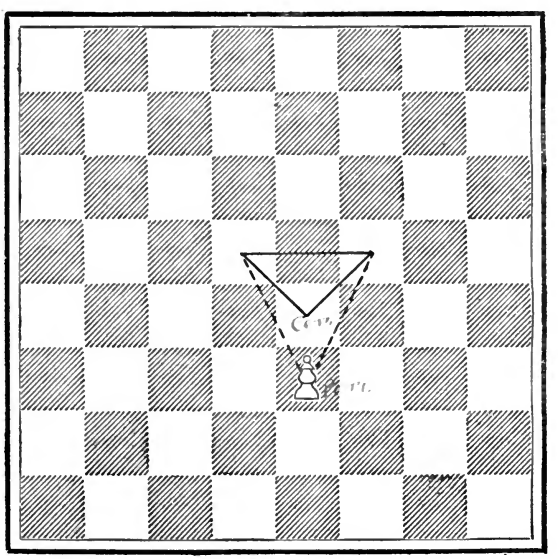
A Sub-Geometric Symbol is that mathematical figure which in a given situation appertains to the Prime Tactical Factor, and whose centre is unoccupied by a kindred piece, and whose periphery is occupied by the given Prime Tactical Factor.

SUB-GEOMETRIC SYMBOL OF THE PAWN.

FIGURE 7.

(*a.*)

Black.



White.

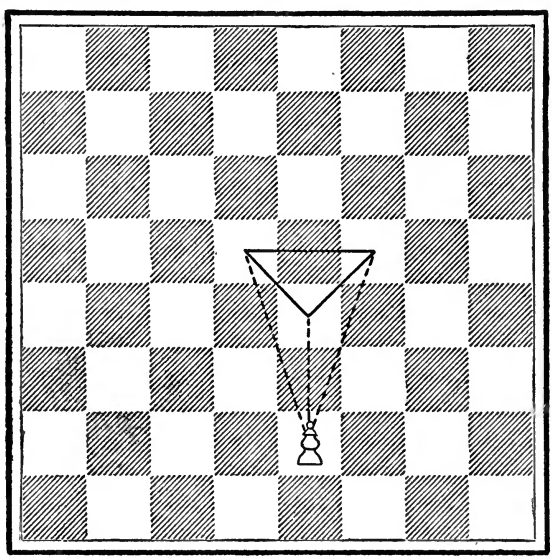
NOTE. — That point which is the centre of the geometric symbol of a piece always is the centre of its sub-geometric symbol.

SUB-GEOMETRIC SYMBOL OF THE PAWN.

FIGURE 8.

(*b.*)

Black.



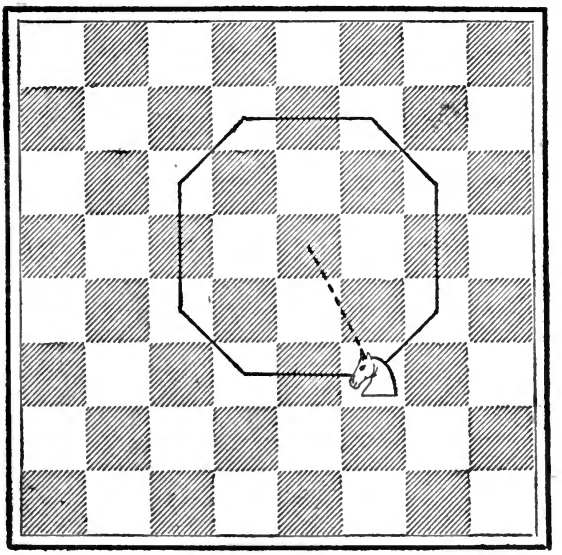
White.

NOTE. — A piece always may reach the centre of its sub-geometric symbol in one move.

SUB-GEOMETRIC SYMBOL OF THE KNIGHT.

FIGURE 9.

Black.



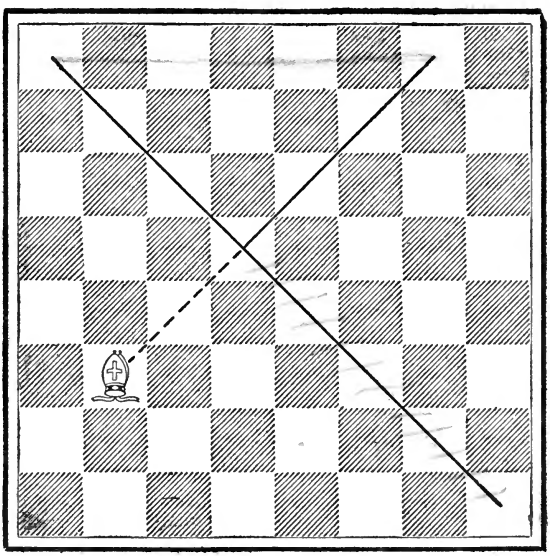
White.

NOTE. — If the piece has the move, the sub-geometric symbol is positive; otherwise, it is negative.

SUB-GEOMETRIC SYMBOL OF THE BISHOP.

FIGURE 10.

Black.



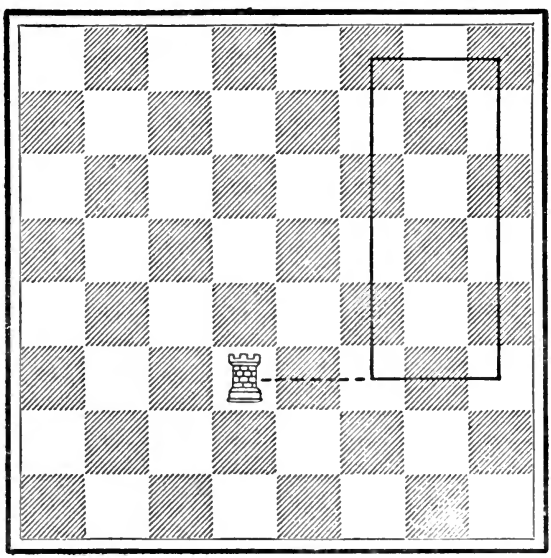
White.

NOTE. — The sub-geometric symbol is the mathematical figure common to situations in which the decisive blow is preparing.

SUB-GEOMETRIC SYMBOL OF THE ROOK.

FIGURE 11.

Black.



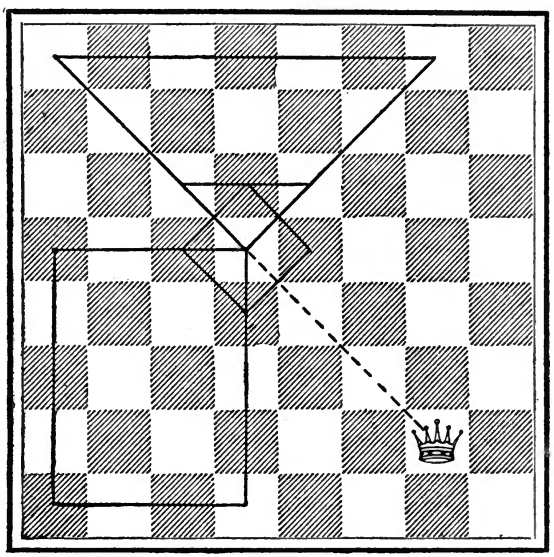
White.

NOTE. — The sub-geometric symbol properly should eventuate into the geometric symbol.

SUB-GEOMETRIC SYMBOL OF THE QUEEN.

FIGURE 12.

Black.



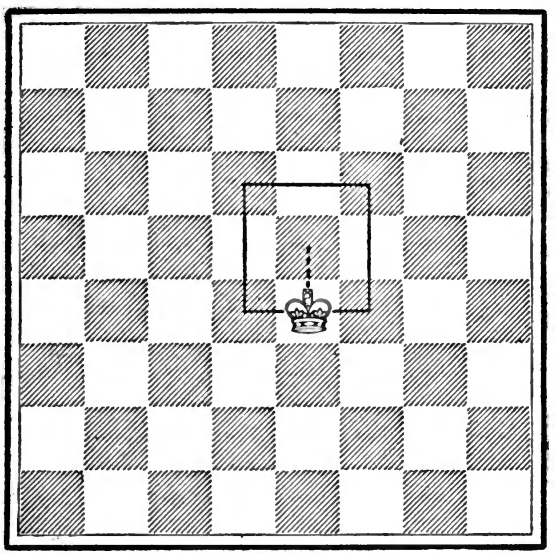
White.

NOTE. — A piece always moves to the centre of its sub-geometric symbol.

SUB-GEOMETRIC SYMBOL OF THE KING.

FIGURE 13.

Black.



White.

NOTE. — An evolution based upon a sub-geometric symbol always contemplates, as the decisive stroke, the move which makes the sub-geometric symbol positive.

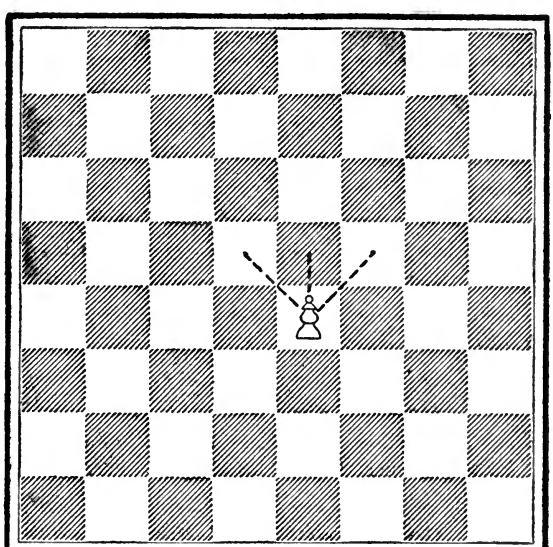
LOGISTIC SYMBOLS.

The Logistic Symbol of an integer of chess force typifies its movement over the surface of the chess-board and always is combined with the geometric symbol or with the sub-geometric symbol in the execution of a given calculation.

LOGISTIC SYMBOL OF THE PAWN.

FIGURE 14.

Black.



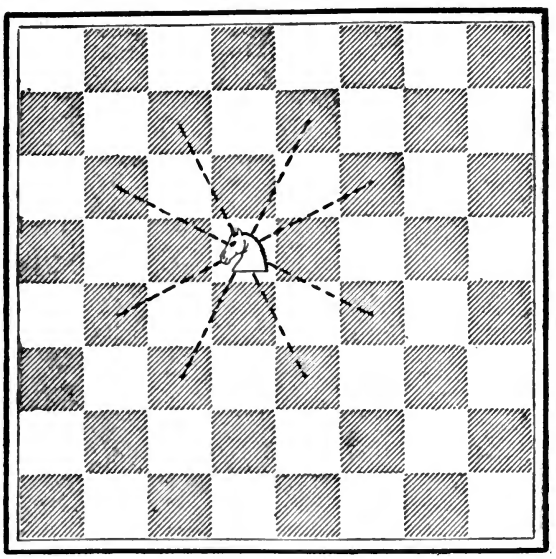
White.

NOTE. — A piece moves only in the direction of and to the limit of its logistic radii.

LOGISTIC SYMBOL OF THE KNIGHT.

FIGURE 15.

Black.



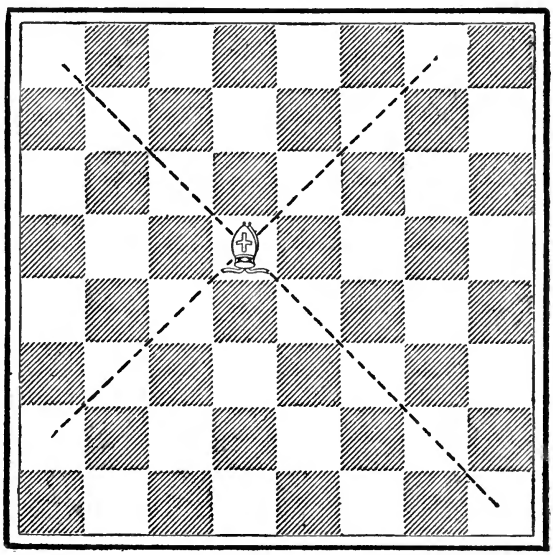
White.

NOTE. — A piece having the move can proceed at the given time along only one of its logistic radii.

LOGISTIC SYMBOL OF THE BISHOP.

FIGURE 16.

Black.



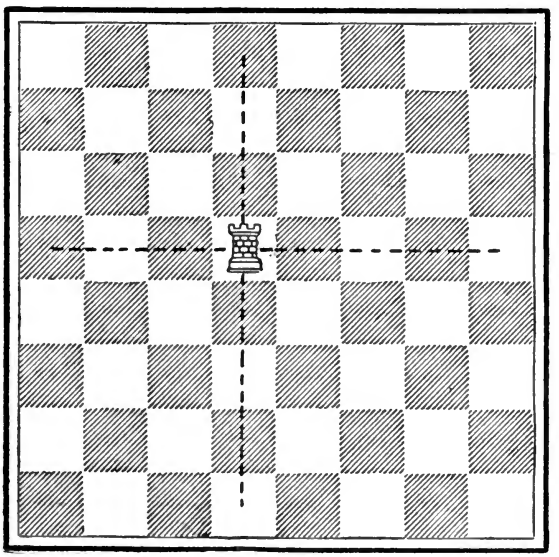
White.

NOTE. — The logistic radii of a piece all unite at the centre of its geometric symbol.

LOGISTIC SYMBOL OF THE ROOK.

FIGURE 17.

Black.



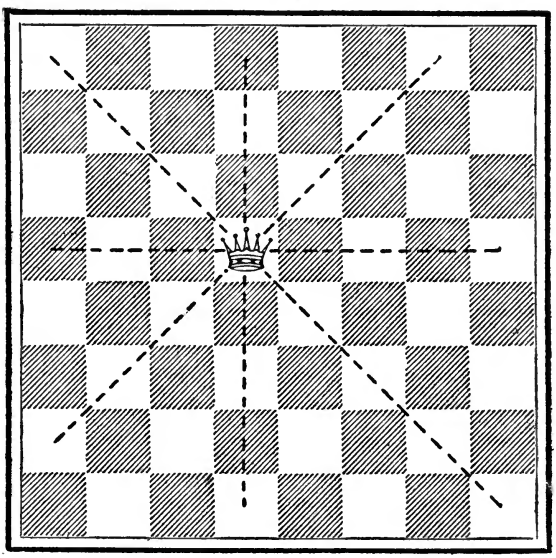
White.

NOTE. — The termini of the logistic radii of a piece always are the vertices of its geometric symbol.

LOGISTIC SYMBOL OF THE QUEEN.

FIGURE 18.

Black.



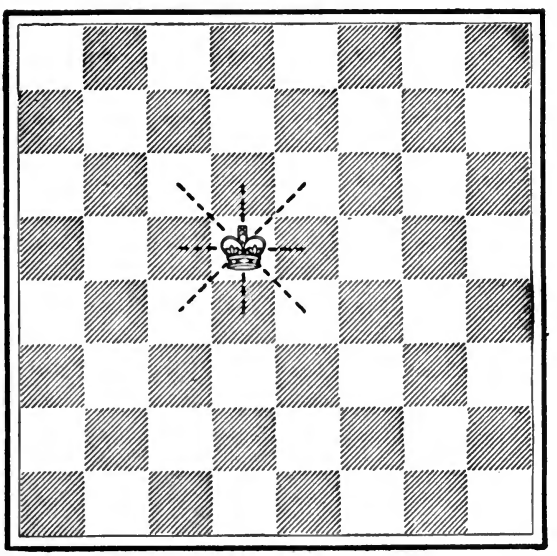
White.

NOTE. — The logistic radii of a piece always extend from the centre of its geometric symbol to the perimeter.

LOGISTIC SYMBOL OF THE KING.

FIGURE 19.

Black.



White.

NOTE. — The logistic radii of a piece always are straight lines, and always take the form of verticals, horizontals, diagonals, or obliques.

GEOMETRIC PLANES.

Whenever the geometric symbols appertaining to one or more kindred pieces and to one or more adverse pieces are combined in the same evolution; then that part of the surface of the chessboard upon which such evolution is executed is termed in this theory a *Geometric Plane.*

Geometric Planes are divided into three classes:

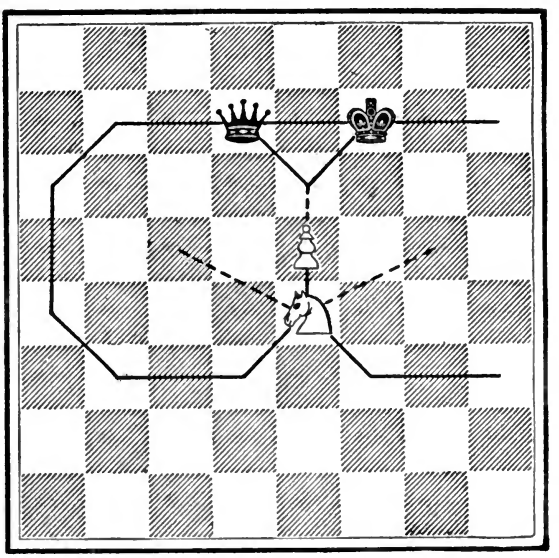
I. STRATEGIC.
II. TACTICAL.
III. LOGISTIC.

Whenever the object of a given evolution is to gain adverse material, then that mathematical figure produced by the combination of the geometric symbols appertaining to the integers of chess force thus engaged is termed a *Tactical Plane.*

A TACTICAL PLANE.

FIGURE 20.

Black.



White.

White to play and win adverse material.

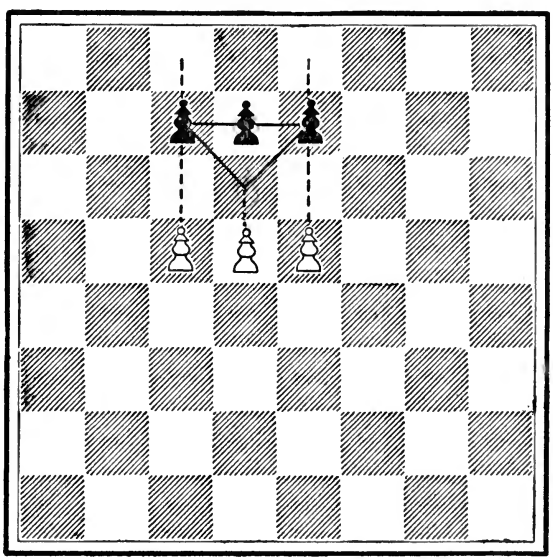
NOTE. — White having the move, wins by 1 P — K 6 (ck) followed by 2 Kt — K Kt 5 (ck) if Black plays 1 Q × P; and by 2 Kt — Q B 5 (ck) if Black plays 1 K × P.

Whenever the object of a given evolution is to queen a kindred pawn, then that mathematical figure produced by the combination of the geometric symbols appertaining to the integers of chess force thus engaged is termed a *Logistic Plane.*

A LOGISTIC PLANE.

FIGURE 21.

Black.



White.

White to play and queen a kindred pawn.

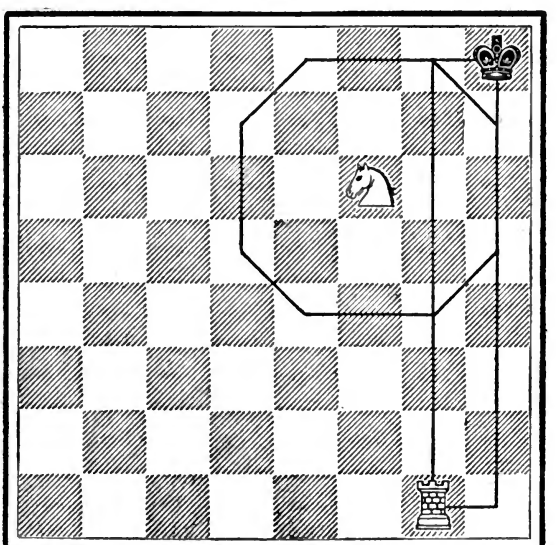
NOTE. — White having the move wins by 1 P — Q 6, followed by 2 P — Q B 6, if Black plays 1 K P × P and by 2 P — K 6, if Black plays 1 B P × P.

Whenever the object of a given evolution is to checkmate the adverse king, then that mathematical figure produced by the combination of the geometric symbols appertaining to the integers of chess force thus engaged is termed a *Strategic Plane.*

A STRATEGIC PLANE.

FIGURE 22.

Black.



White.

White to play and checkmate the adverse king.

NOTE. — White having to move checkmates the black King in one move by 1 R — K Kt 8 (ck).

PLANE TOPOGRAPHY.

Those verticals, horizontals, diagonals, and obliques, and the points situated thereon, which are contained in a given evolution, constitute, when taken collectively, the *Topography* of a given plane.

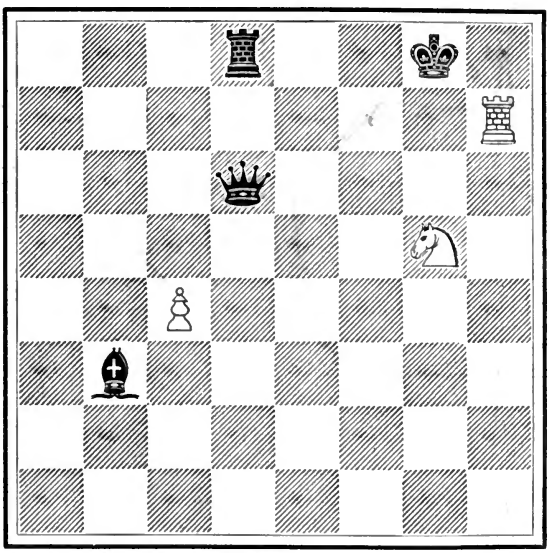
Every plane, whether strategic, tactical, or logistic, always contains the following topographical features : —

1. Zone of Evolution.
2. Kindred Integers.
3. Hostile Integers.
4. Prime Tactical Factor.
5. Supporting Factor.
6. Auxiliary Factor.
7. Piece Exposed.
8. Disturbing Integer.
9. Primary Origin.
10. Supporting Origin.
11. Auxiliary Origin.
12. Point Material.
13. Point of Interference.
14. Tactical Front.
15. Front Offensive.
16. Front Defensive.
17. Supporting Front.
18. Front Auxiliary.
19. Front of Interference.
20. Point of Co-operation.
21. Point of Command.
22. Point Commanded.
23. Prime Radius of Offence.
24. Tactical Objective.
25. The Tactical Sequence.

A COMPLEX TACTICAL PLANE.

FIGURE 23.

Black.



White.

White to play and win.

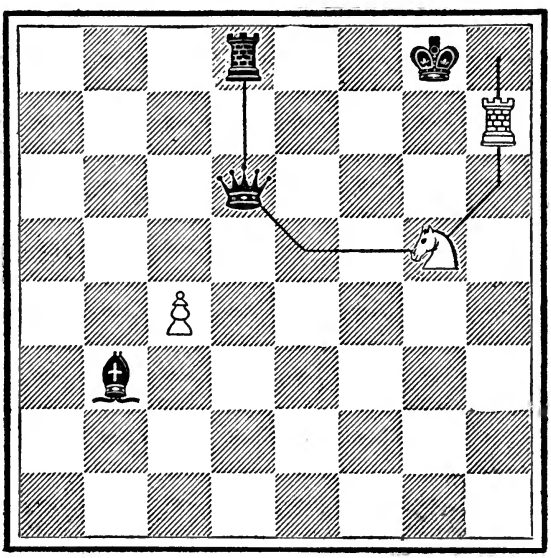
NOTE. — White wins by 1 R — K R 8 (ck), followed, if Black plays 1 K × R, by 2 Kt — K B 7 (ck); and if Black plays 1 K — Kt 2, by 2 R × R, for if now Black plays 2 Q × R, then follows 3 Kt — K 6 (ck), and White wins the black Q.

A SUB-GEOMETRIC SYMBOL POSITIVE.

(G. S. P.)

FIGURE 24.

Black.



White.

White to move.

NOTE. — White having to move, the geometric symbol is positive; had Black to move, the geometric symbol would be negative.

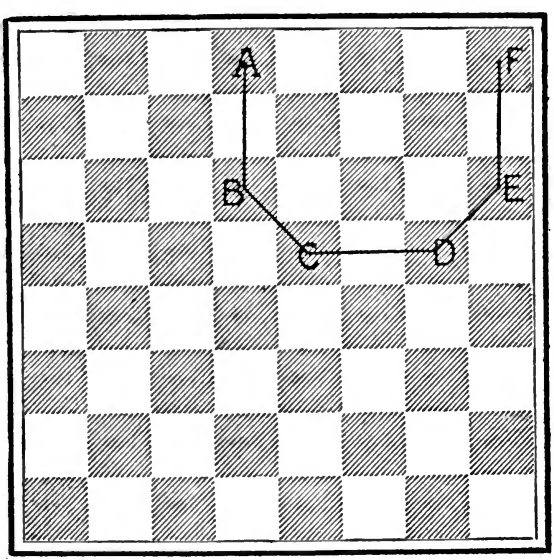
The Zone of Evolution is composed of those verticals, diagonals, horizontals, and obliques which are comprehended in the movements of those pieces which enter into a given evolution. The principal figure in any Zone of Evolution is that geometric symbol which appertains to the Prime Tactical Factor.

THE ZONE OF EVOLUTION.

(Z. E.)

FIGURE 25.

Black.



White

NOTE. — The letters A B C D E F mark the vertices of an octagon, which is the principal figure in this evolution, as the Prime Tactical Factor is a Knight.

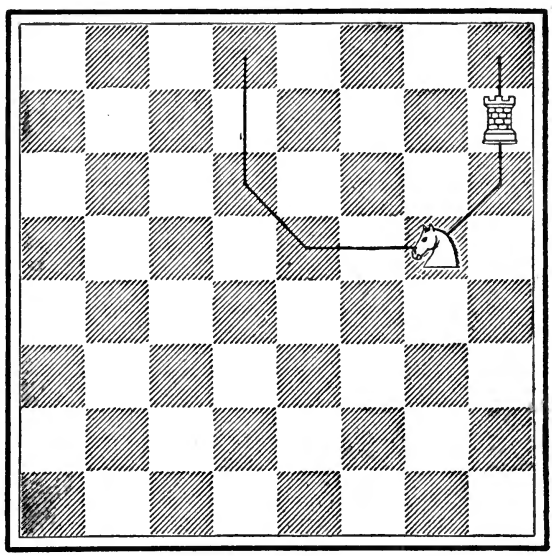
A Kindred Integer is any co-operating piece which is contained in a given evolution.

KINDRED INTEGERS.

(K. I.)

FIGURE 26.

Black.



White.

NOTE. — The kindred Integers always have the move in any given evolution, and always are of the same color as the Prime Tactical Factor.

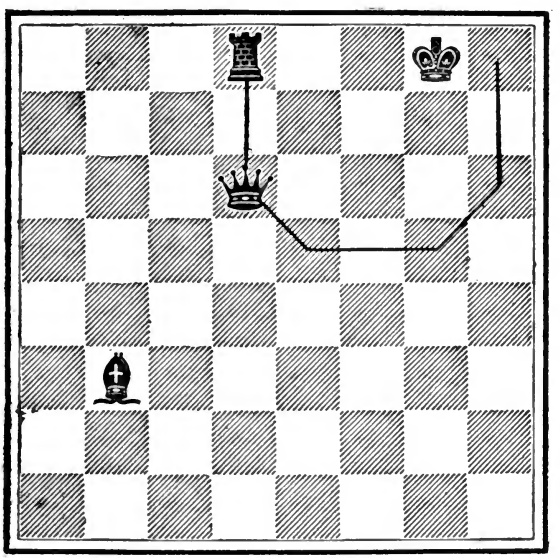
A Hostile Integer is any adverse piece which is contained in a given evolution.

HOSTILE INTEGERS.

(H. I.)

FIGURE 27.

Black.



White.

NOTE. — The Hostile Integers never have the move in any evolution and always are opposite in color to the Prime Tactical Factor.

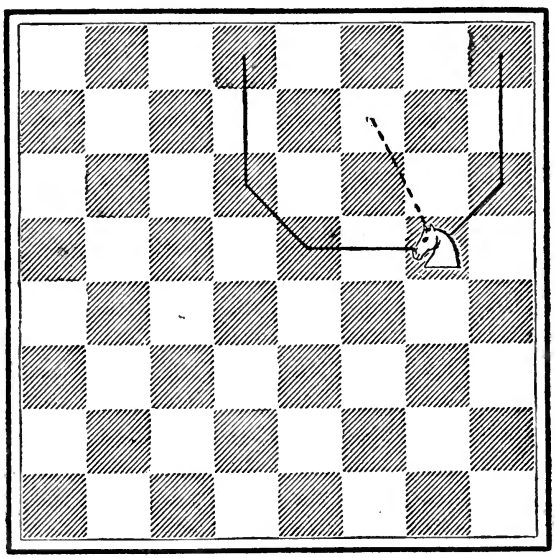
The Prime Tactical Factor is that kindred Pawn or Piece which in a given evolution either check-mates the adverse King, or captures adverse material, or is promoted to and utilized as some other kindred piece.

THE PRIME TACTICAL FACTOR.

(P. T. F.)

FIGURE 28.

Black.



White.

NOTE. — The Prime Tactical Factor always is situated either at the centre or upon the periphery of the zone of evolution.

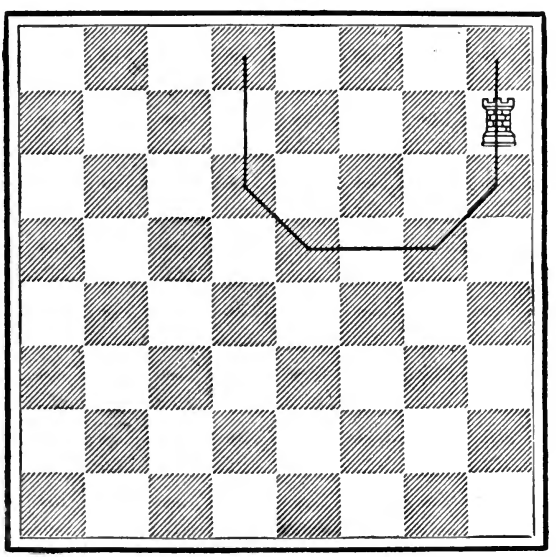
The Supporting Factor is that kindred piece which directly co-operates in an evolution with the Prime Tactical Factor.

THE SUPPORTING FACTOR.

(S. F.)

FIGURE 29.

Black.



White.

NOTE. — The Supporting Factor always is situated upon one of the sides of the zone of evolution.

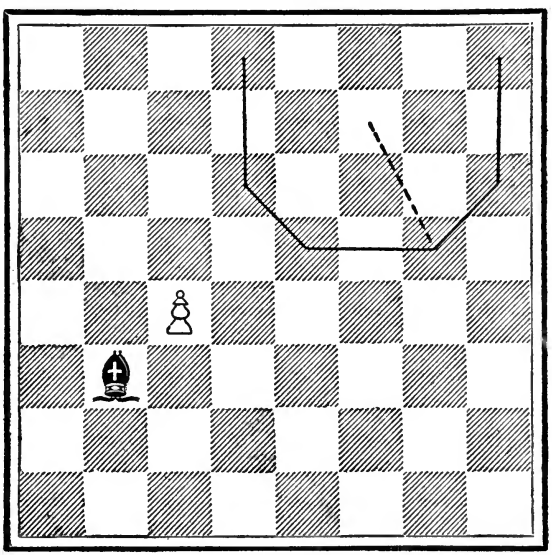
An Auxiliary Factor is that kindred piece which indirectly co-operates with the Prime Tactical Factor by neutralizing the interference of hostile pieces not contained in the immediate evolution.

AN AUXILIARY FACTOR.

(A. F.)

FIGURE 30.

Black.



White.

NOTE. — The Auxiliary Factor may be situated at any point and either within or outside of the zone of evolution.

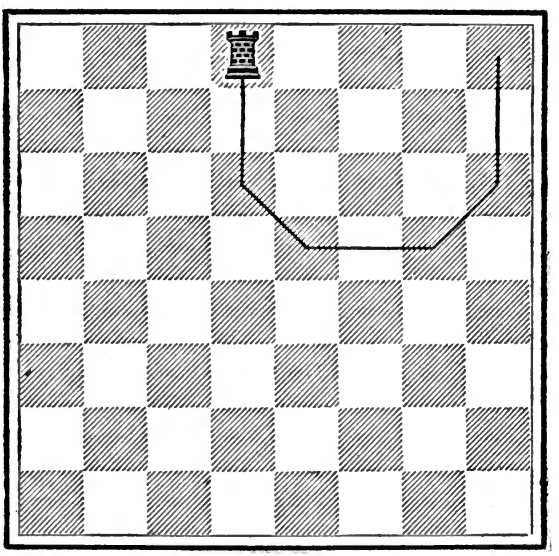
The Piece Exposed is that adverse integer of chess force whose capture in a given evolution may be mathematically demonstrated.

THE PIECE EXPOSED.

(P. E.)

FIGURE 31.

Black.



White.

NOTE. — The Piece Exposed always is situated either upon one of the sides or at one of the vertices of the zone of evolution.

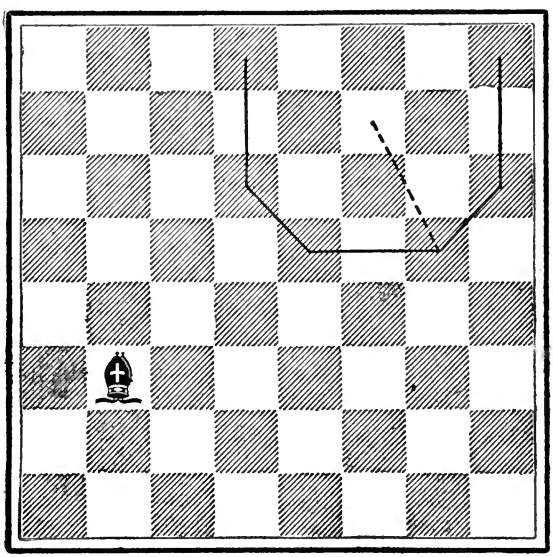
A Disturbing Integer is an adverse piece which prevents the Prime Tactical Factor from occupying the Point of Command, or the Supporting Factor from occupying the Point of Co-operation.

A DISTURBING FACTOR.

(D. F.)

FIGURE 32.

Black.



White.

NOTE. — A Disturbing Factor may or may not be situated within the zone of evolution.

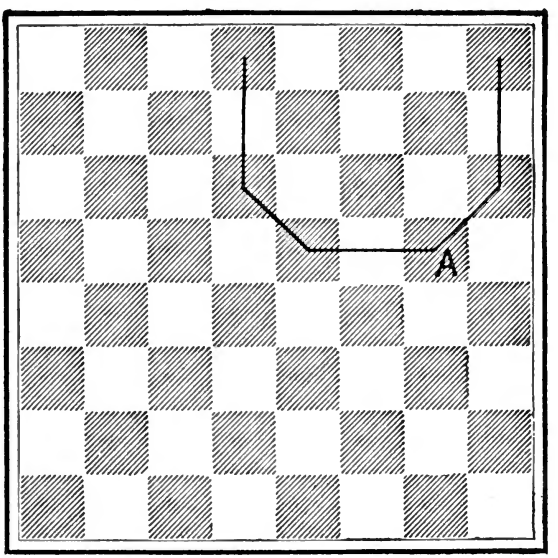
The Primary Origin is that point which, at the beginning of an evolution, is occupied by the Prime Tactical Factor.

THE PRIMARY ORIGIN.

(P. O.)

FIGURE 33.

Black.



White.

NOTE. — The point A is the Primary Origin in this evolution, as it is the original post of the Prime Tactical Factor.

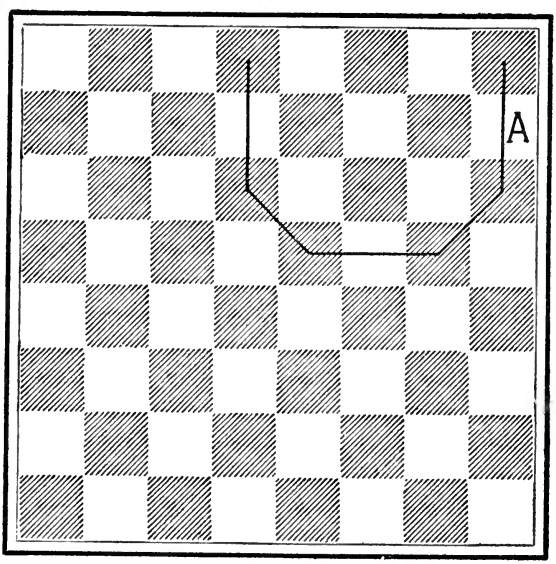
The Supporting Origin is the point occupied by the Supporting Factor at the beginning of an evolution.

THE SUPPORTING ORIGIN.

(P. S.)

FIGURE 34.

Black.



White.

NOTE. — The point A is the Supporting Origin in this evolution, as it is the original post of the Supporting Factor.

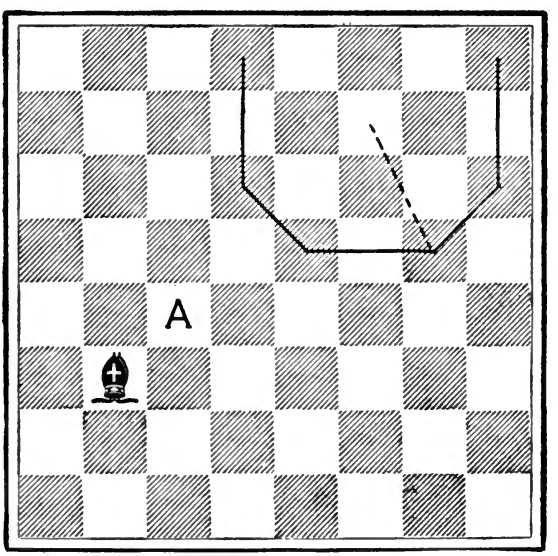
The Auxiliary Origin is the point occupied by the Auxiliary Factor at the beginning of an evolution.

A POINT AUXILIARY.

(P. A.)

FIGURE 35.

Black.



White.

NOTE. — The Point A is the Auxiliary Origin in this evolution, as it is the original post of the Auxiliary Factor.

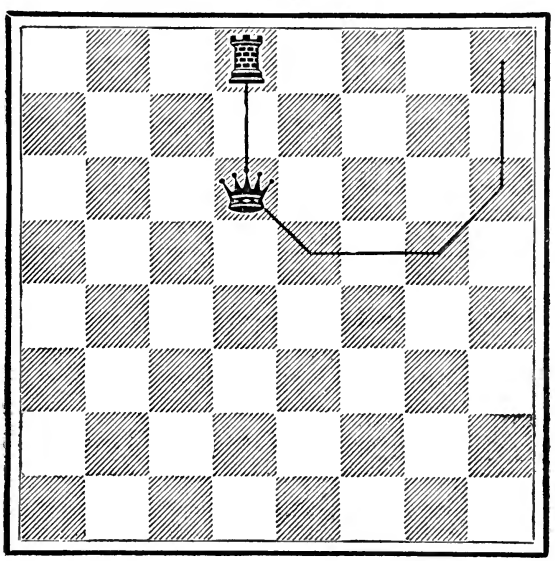
The Point Material is that point which is occupied by the adverse piece which, in a given evolution, it is proposed to capture.

POINTS MATERIAL.

(P. M.)

FIGURE 36.

Black.



White.

NOTE. — A Point Material always is situated either at one of the vertices or upon one of the sides of the zone of evolution.

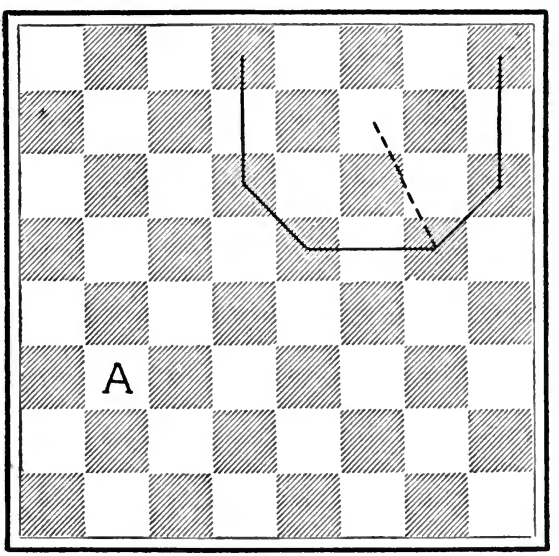
A Point of Interference is that point which is occupied by the Disturbing Integer.

A POINT OF INTERFERENCE.

(P. I.)

FIGURE 37.

Black.



White.

NOTE. — The point A is the Point of Interference in this evolution, as it is the original post of the Disturbing Factor.

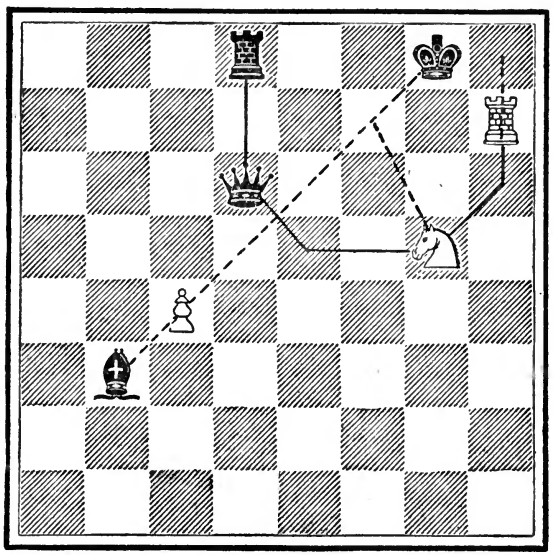
The Tactical Front is composed of the Fronts Offensive, Defensive, Auxiliary, Supporting, and of Interference.

THE TACTICAL FRONT.

(T. F.)

FIGURE 38.

Black.



White.

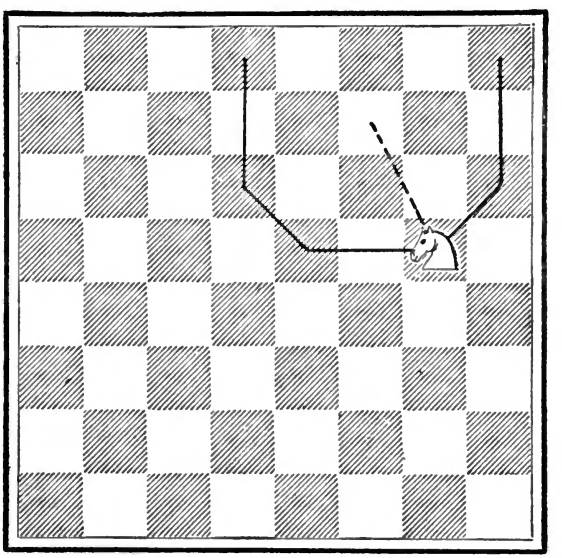
NOTE. — The Front Offensive extends from White's K Kt 5 to K B 7; the Front Defensive from K Kt 1 to K B 2; the Front of Interference from Q Kt 3 to K B 7; the Front Supporting from K R 7 to K R 8; the Front Auxiliary is at Q B 4.

The Front Offensive is that vertical, diagonal, horizontal, or oblique which connects the Primary Origin with the Point of Command.

THE FRONT OFFENSIVE.

FIGURE 39.

Black.



White.

NOTE. — The Front Offensive extends from White's K Kt 5 to K B 7.

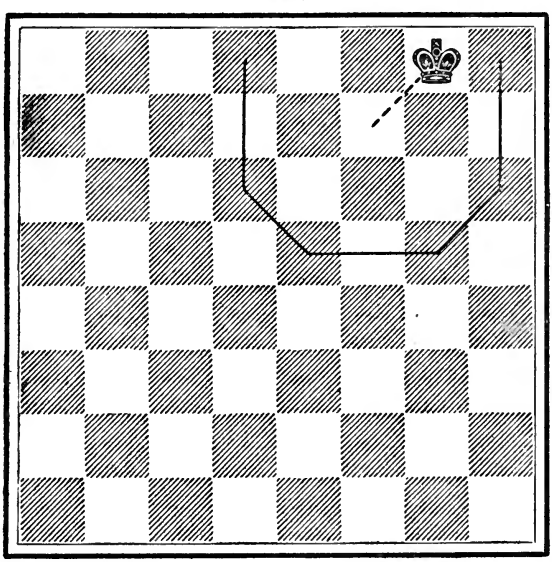
The Front Defensive is that vertical, horizontal, diagonal, or oblique which extends from the Point of Command to any point occupied by a hostile integer contained in the geometric symbol which appertains to the Prime Tactical Factor.

THE FRONT DEFENSIVE.

(F. D.)

FIGURE 40.

Black.



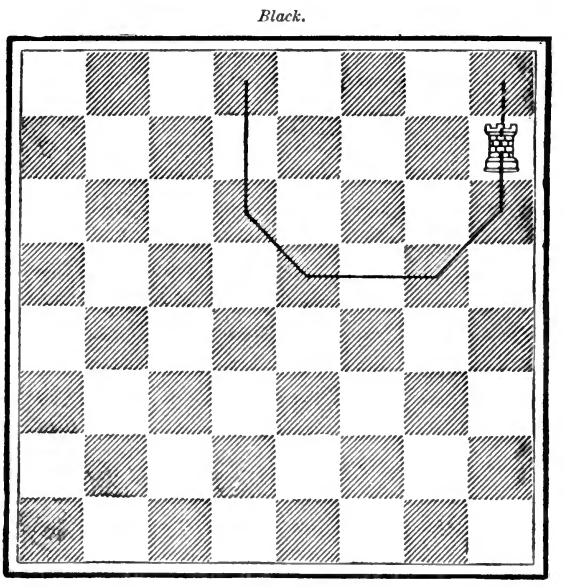
White.

NOTE. — The Front Defensive in this evolution extends from black K Kt 1 to K B 2.

The Supporting Front is that vertical, horizontal, diagonal, and oblique which unites the Supporting Origin with the Point of Co-operation.

THE SUPPORTING FRONT.

FIGURE 41.



NOTE. — The Front of Support in this evolution extends from White's K R 7 to K R 8.

A Front Auxiliary is that vertical, horizontal, diagonal, or oblique which extends from the Point Auxiliary to the Point of Interference; or that point situated on the Front of Interference which is occupied by the Auxiliary Factor.

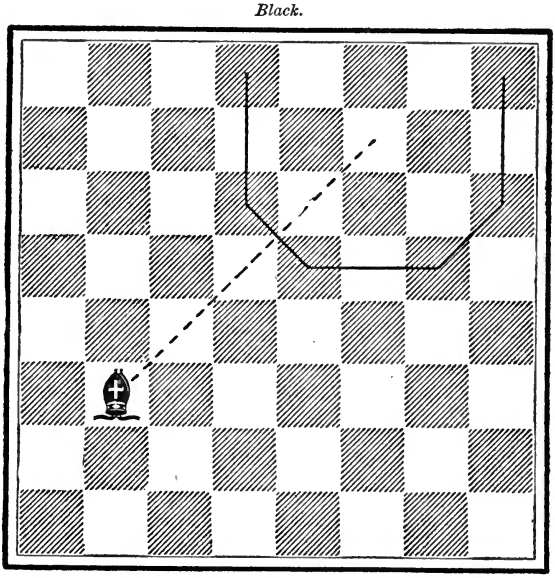
The Front of Interference is that vertical, horizontal, diagonal, or oblique which unites the Point of Interference with the Point of Command, or with the Point of Co-operation.

A FRONT OF INTERFERENCE.

(F. I.)

FIGURE 42.

Black.



White.

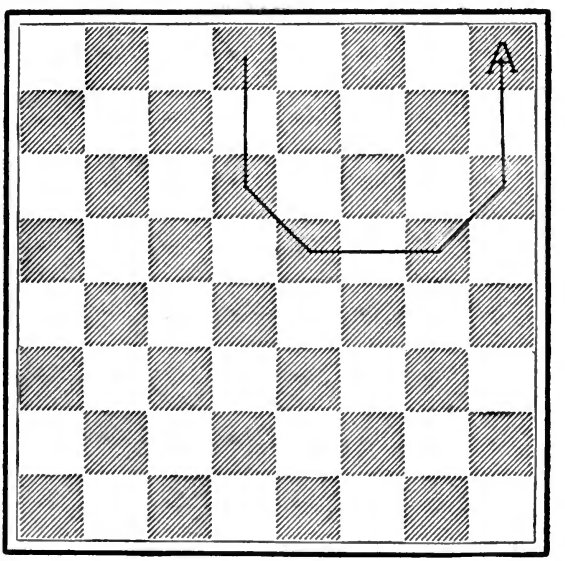
NOTE. — The Front of Interference in this evolution extends from White's Q Kt 3 to K B 7.

The Point of Co-operation is that point which when occupied by the Supporting Factor enables the Prime Tactical Factor to occupy the Point of Command.

THE POINT OF CO-OPERATION.

FIGURE 43.

Black.



White.

NOTE. — The Point of Co-operation in this evolution is the white square K R 8.

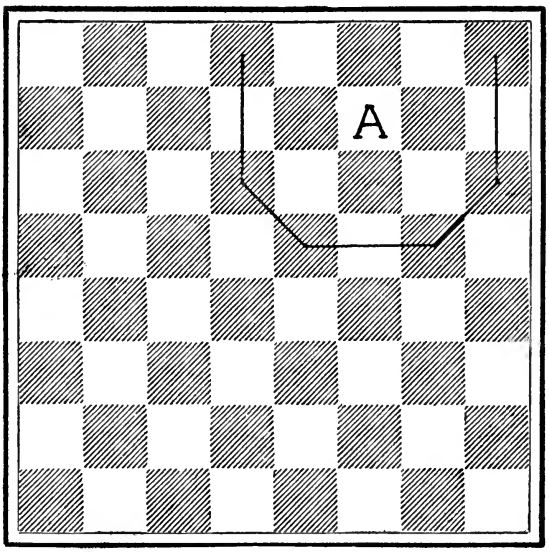
The Point of Command is the centre of that geometric symbol which appertains to the Prime Tactical Factor, and which, when occupied by the latter, wins an adverse piece, or checkmates the adverse king, or ensures the queening of a kindred pawn.

THE POINT OF COMMAND.

(P. C.)

FIGURE 44.

Black.



White.

NOTE. — The Point of Command in this evolution is the white square K B 7.

The Point Commanded is that point at which the Piece Exposed is situated when the Prime Tactical Factor occupies the Point of Command.

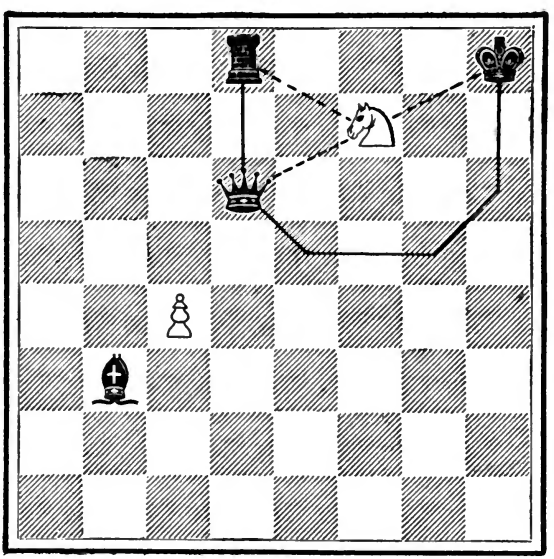
THE POINT COMMANDED.

(C. P.)

FIGURE 45.

(*a.*)

Black.



White.

NOTE. — White has occupied the Point of Co-operation with the Supporting Factor, which latter has been captured by the black King, thus allowing the white Knight to occupy the Point of Command.

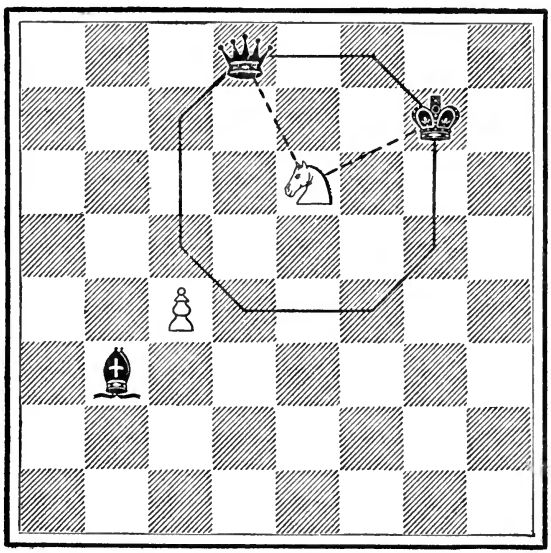
THE POINT COMMANDED.

(C. P.)

FIGURE 46.

(*b.*)

Black.



White.

NOTE. — Black retired before the attack of the Supporting Factor, still defending the Point of Command. The Supporting Factor then captured the black Rook, thus opening up a new and unprotected Point of Command, which is occupied by the white Knight.

Those interested in military science may, perhaps, understand from these two diagrams why all the great captains, from Tamerlane to Von Moltke, so strenuously recommended the study of chess to their officers.

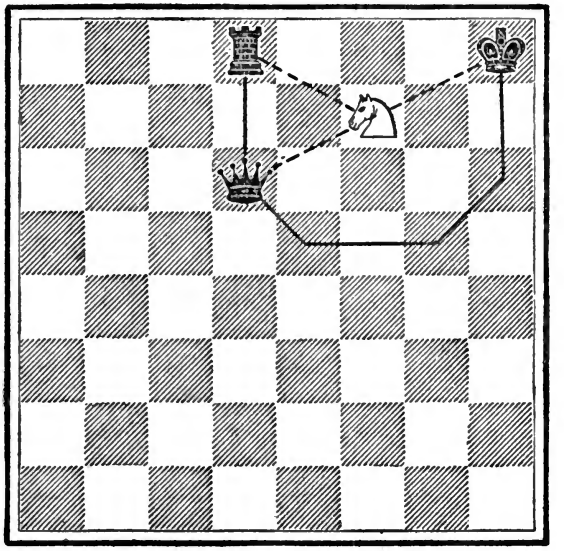
The Prime Radius of Offence is the attacking power radiated by the Prime Tactical Factor from the Point of Command against the Point Commanded.

THE PRIME RADIUS OF OFFENCE.

(P. R. O.)

FIGURE 47.

Black.



White.

NOTE. — In this evolution the Prime Radii of Offence extend from the white point K B 7 to K R 8, Q 6, and Q 8.

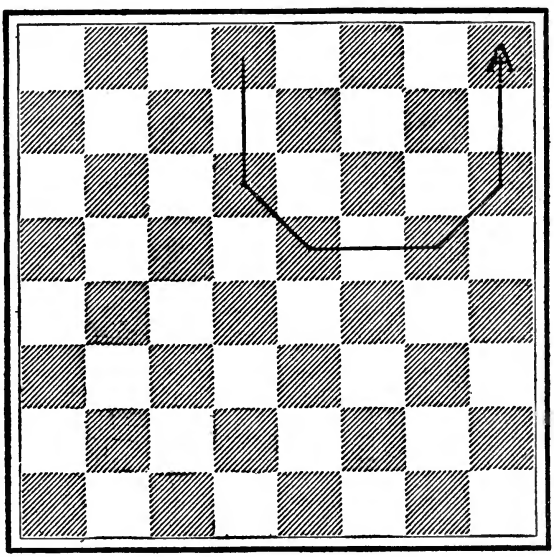
The Tactical Objective is that point on the chess-board whose proper occupation is the immediate object of the initiative in any given evolution.

THE TACTICAL OBJECTIVE.

(T. O.)

FIGURE 48.

Black.



White.

NOTE. In this evolution the point A is the Tactical Objective, *i.e.* the initial movement in its execution is to occupy the Point of Co-operation with the Supporting Factor.

The Tactical Sequence is that series of moves which comprehends the proper execution of any given evolution.

TACTICAL PLANES.

A Tactical Plane is that mathematical figure produced by the combination of two or more kindred geometric symbols in an evolution whose object is gain of material.

Tactical Planes are divided into three classes, viz.: —

I. Simple.
II. Compound.
III. Complex.

A Simple Tactical Plane consists of any kindred geometric symbol combined with a Point Material.

PRINCIPLE.

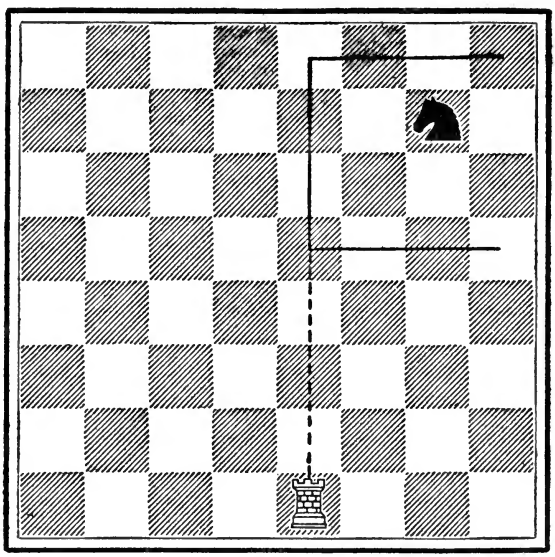
I. Whenever in a simple Tactical Plane, the Primary Origin and the Point Material are contained in the same side of that geometric symbol which appertains to the Prime Tactical Factor, then the latter, having the move, will overcome the opposing force.

II. No evolution in a simple Tactical Plane is valid if the opponent has the move, or if not having the move, he can offer resistance to the march of the Prime Tactical Factor along the Front Offensive.

A SIMPLE TACTICAL PLANE.

FIGURE 49.

Black.



White.

White to play and win the adverse Kt in one move.

NOTE. — The decisive point is that at which the geometric and the logistic symbols appertaining to the Prime Tactical Factor intersect.

A Compound Tactical Plane consists of any kindred geometric symbol combined with two or more Points Material.

PRINCIPLE.

Whenever in a Compound Tactical Plane the Primary Origin and two or more Points Material are situated at

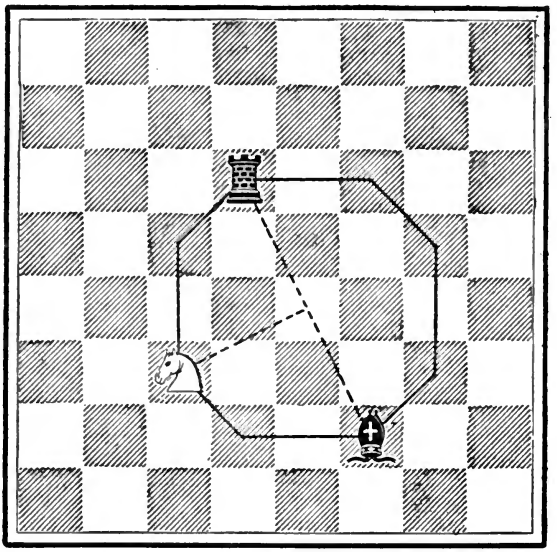
the vertices of that geometric symbol which appertains to the Prime Tactical Factor, then, if the value of each of the Points Material exceeds the value of the Prime Tactical Factor; or, if neither of the Pieces Exposed can support the other in one move, — the Prime Tactical Factor, having the move, will overcome the opposing force.

II. No evolution in a Compound Tactical Plane is valid if the opponent can offer resistance to the Prime Tactical Factor.

A COMPOUND TACTICAL PLANE.

FIGURE 50.

Black.



White.

NOTE. — The decisive point is the centre of the geometric symbol which appertains to the Prime Tactical Factor.

A Complex Tactical Plane consists of the combination of any two or more kindred geometric symbols with one or more Points Material.

PRINCIPLE.

I. No evolution in a Complex Tactical Plane is valid unless it simplifies the position, either by reducing it to a Compound Tactical Plane in which the opponent, even with the move, can offer no resistance; or to a Simple Tactical Plane, in which the opponent has not the move nor can offer any resistance.

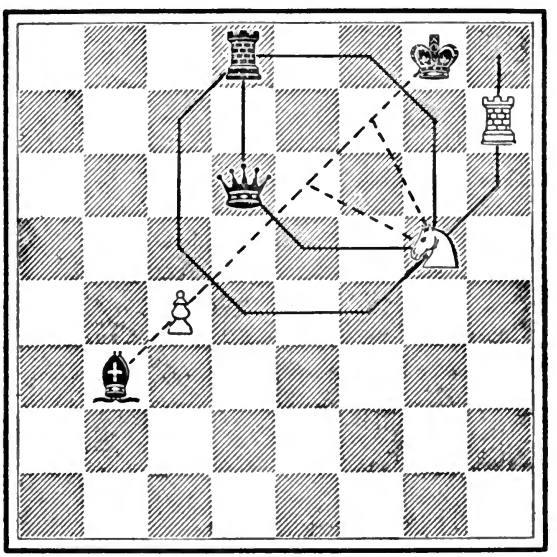
II. To reduce a Complex Tactical Plane to a Compound Tactical Plane, establish the Supporting Origin at such a point and at such a time that, whether the Supporting Factor be captured or not, the Primary Origin and two or more of the Points Material will become situated on that side of the geometric figure which appertains to the Prime Tactical Factor, the latter having to move.

III. To reduce a Complex Tactical Plane to a Simple Tactical Plane, eliminate all the Points Material save one, and all the Hostile Integers save one, and establish the Primary Origin and the Point Material upon the same side of that geometric figure which appertains to the Prime Tactical Factor, the latter having to move.

A COMPLEX TACTICAL PLANE.

FIGURE 51.

Black.



White.

NOTE. —This diagram is elaborated to show the student the Supplementary Knight's Octagon and the Supplementary Point of Command at White's K 6.

LOGISTIC PLANES.

A LOGISTIC PLANE is that mathematical figure produced by the combination of two or more kindred geometric symbols in an evolution whose object is to queen a kindred pawn.

A LOGISTIC PLANE is composed of a given logistic horizon, the adverse pawns, the adverse pawn altitudes, and the kindred Points of Resistance.

Logistic Planes are divided into three classes: —

I. SIMPLE.
II. COMPOUND.
III. COMPLEX.

A simple Logistic Plane consists of a pawn altitude, combined adversely with that geometric figure which appertains to either a P, Kt, B, R, Q, or K.

In a plane of this kind the pawn always is the Prime Tactical Factor.

The following governs all logistic planes: —

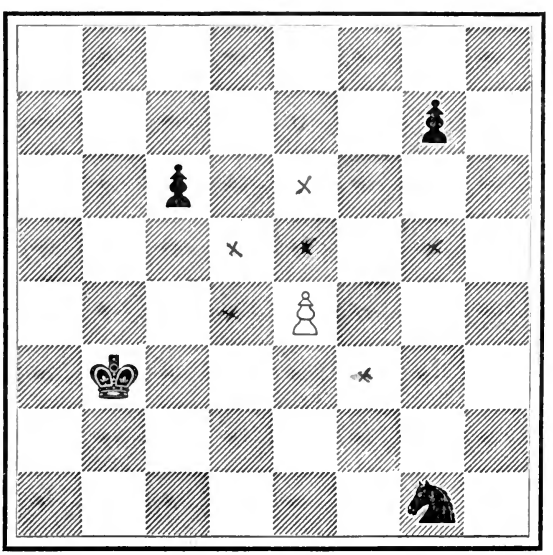
PRINCIPLE.

Whenever the number of pawn altitudes exceeds the number of Points of Resistance, the given pawn queens without capture against any adverse piece.

A SIMPLE LOGISTIC PLANE.

FIGURE 52.

Black.



White.

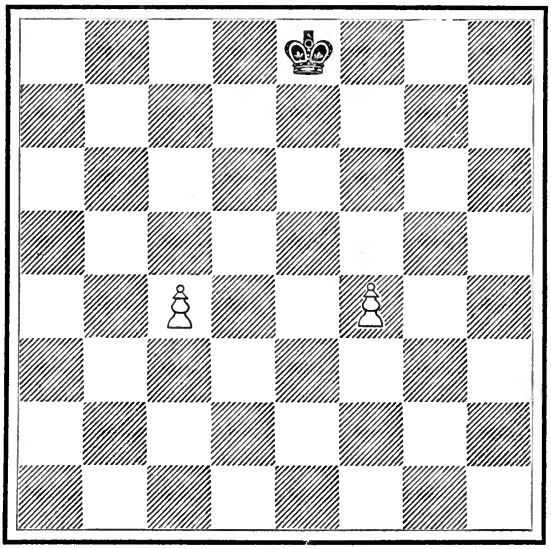
White to move and queen a pawn without capture by an adverse piece.

A Compound Logistic Plane is composed of two kindred pawn altitudes combined adversely with the geometric figures appertaining to one or more opposing integers of chess force.

A COMPOUND LOGISTIC PLANE.

FIGURE 53.

Black.



White.

White to move and queen a pawn without capture by the adverse King.

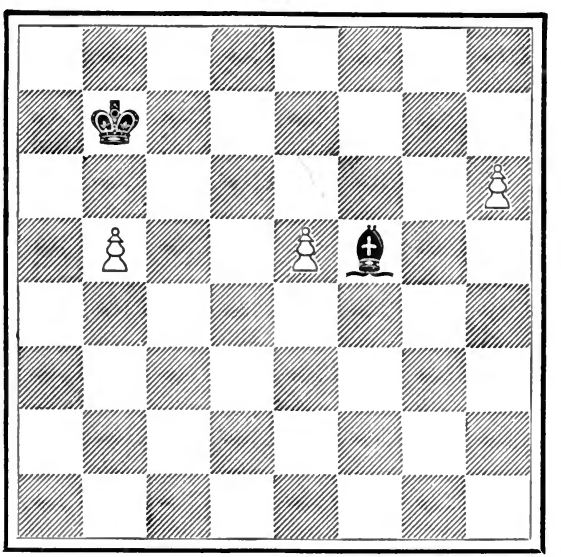
NOTE. — It will be easily seen that the black King cannot stop both of the white Pawns.

A Complex Logistic Plane consists of three kindred pawn altitudes combined adversely with the geometric figures appertaining to one or more opposing integers of chess force.

A COMPLEX LOGISTIC PLANE.

FIGURE 54.

Black.



White.

White to move and queen a pawn without capture by the adverse pieces.

NOTE.—The black King and the black Bishop are each unable to stop more than one Pawn.

Plane Topography. — The following topographical features are peculiar to Logistic Planes: —

1. Logistic Horizon.
2. Pawn Altitude.
3. Point of Junction.
4. Square of Progression.
5. Corresponding Knights Octagon.
6. Point of Resistance.

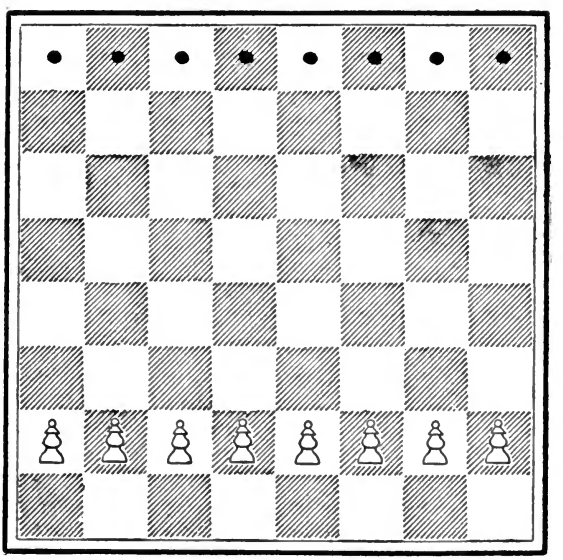
The Logistic Horizon is that extremity of the chess-board, at which, upon arrival, a pawn may be promoted to the rank of any kindred piece. The Logistic Horizon of White always is the eighth horizontal; that of Black always is the first horizontal.

THE LOGISTIC HORIZON.

(White).

FIGURE 55.

Black.



White.

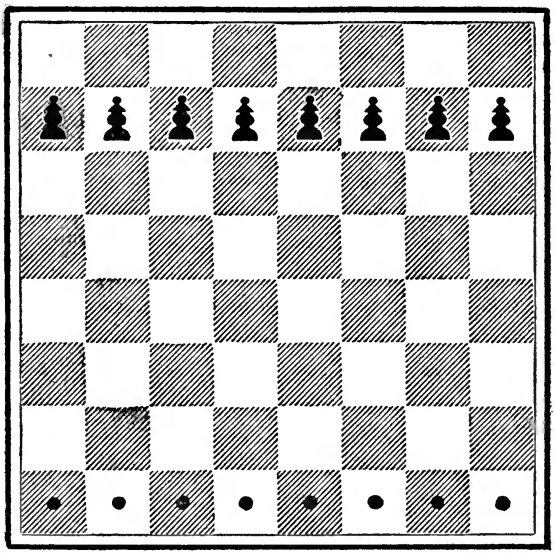
NOTE. — The Points of Junction are designated by black dots.

THE LOGISTIC HORIZON.

(Black.)

FIGURE 56.

Black.



White.

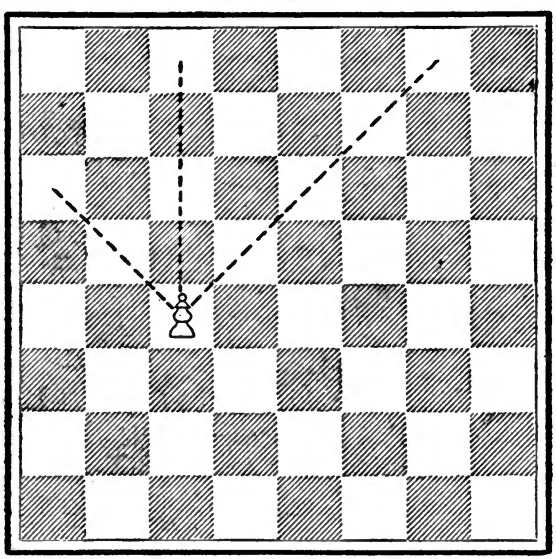
A Pawn Altitude is composed of those verticals and diagonals along which it is possible for a pawn to pass to its logistic horizon.

A PAWN ALTITUDE

(P. A.)

FIGURE 57.

Black.



White.

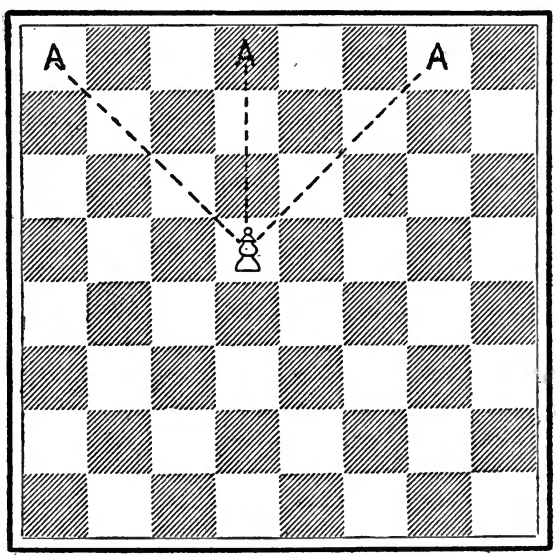
A Point of Junction is that point at which an extremity of a pawn altitude intersects the logistic horizon, *i. e.* the queening point of a given pawn.

A POINT OF JUNCTION.

(P. J.)

FIGURE 58.

Black.



White.

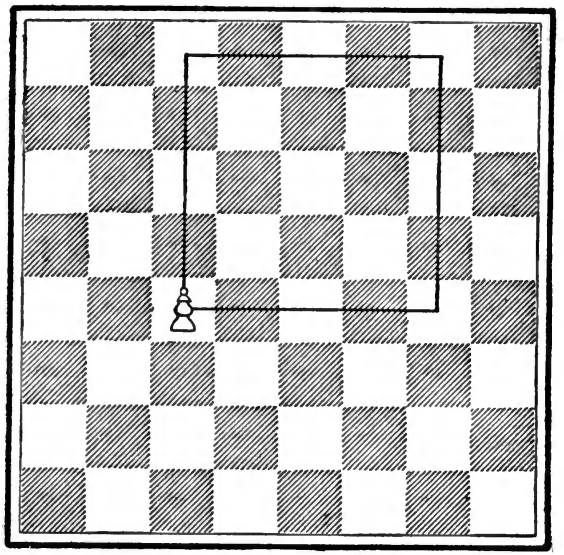
The Square of Progression is that part of the logistic Plane of which the pawn's vertical is one side and whose area is the square of the pawn's altitude.

A SQUARE OF PROGRESSION.

(S. P.)

FIGURE 59.

Black.



White.

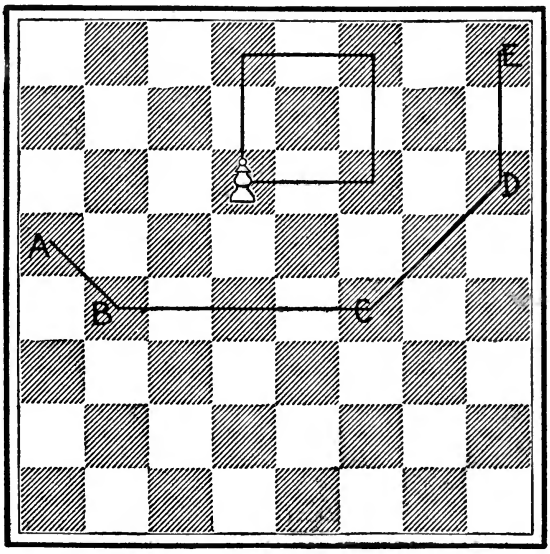
The Corresponding Knight's Octagon is that Knight octagon whose centre is the queening point of the pawn, and whose radius consists of a number of Knight's moves equal to the number of moves to be made by the pawn in reaching its queening point.

THE CORRESPONDING KNIGHT'S OCTAGON.

(C. K. O.)

FIGURE 60.

Black.



White.

NOTE. — The pawn has but two moves to make in order to queen. The points ABCDE are two Knight's moves from the queening point.

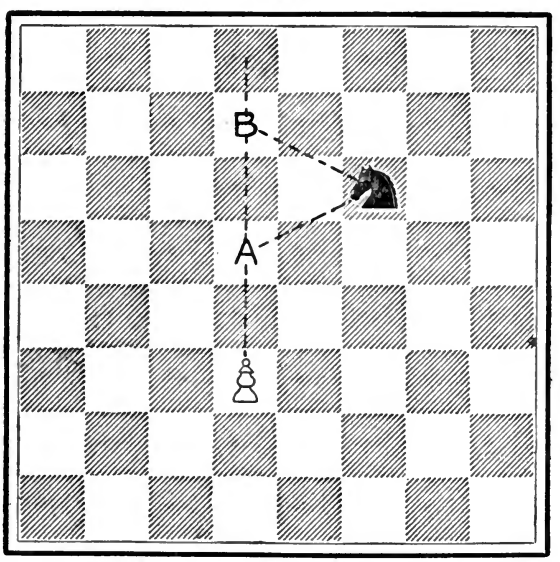
A Point of Resistance is that point on a pawn altitude which is commanded by a hostile integer and which is situated between the Primary Origin and the Point of Junction.

POINT OF RESISTANCE.

(P. R.)

FIGURE 61.

Black.



White.

NOTE. — In this evolution, the points A and B are points of resistance, as they prevent the queening of the Prime Tactical Factor.

STRATEGIC PLANES.

A STRATEGIC PLANE is that mathematical figure produced by the combination of two or more geometric symbols in an evolution whose object is to checkmate the adverse King.

A STRATEGIC PLANE is composed of a given Objective Plane and of the Origins occupied by the attacking and by the defending pieces.

Strategic planes are divided into three classes: —

I. SIMPLE.
II. COMPOUND.
III. COMPLEX.

A Simple Strategic Plane is one which may be commanded by the Prime Tactical Factor.

Simple Strategic Planes are governed by the following

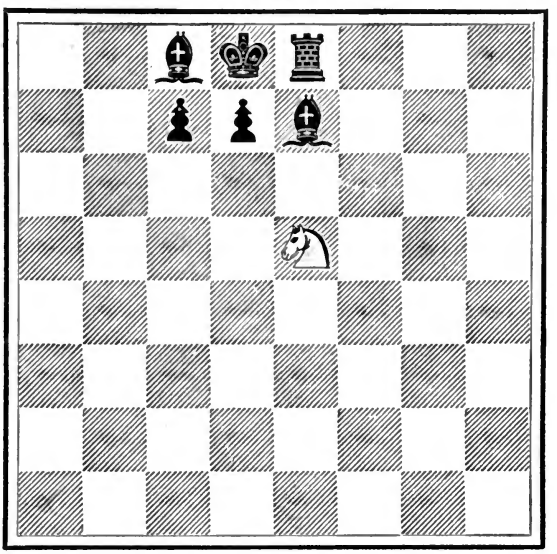
PRINCIPLE.

Whenever the net value of the offensive force radiated by a given piece is equal to the net mobility of the Objective Plane; then, the given piece may checkmate the adverse King.

A SIMPLE STRATEGIC PLANE.

FIGURE 62.

Black.



White.

White to play and mate in one move.

A Compound Strategic Plane is one which may be commanded by the Prime Tactical Factor with the aid of either the supporting or the auxiliary Factor.

Compound Strategic Planes are governed by the following

PRINCIPLE.

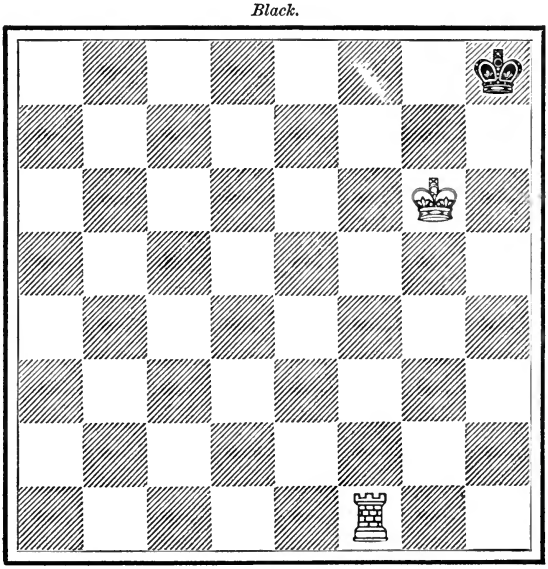
Whenever the net value of the offensive force radiated by two kindred pieces is equal to the net mobility of the Objective Plane, then the given pieces may checkmate the adverse King.

A COMPOUND STRATEGIC PLANE.

(*a.*)

FIGURE 63.

Black.



White.

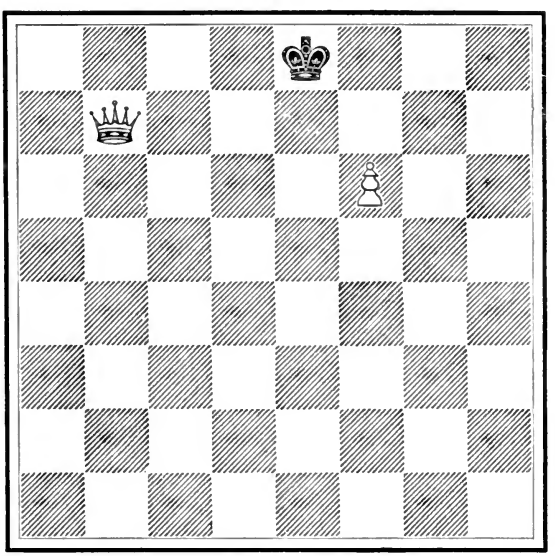
White to play and mate in one move.

A COMPOUND STRAGETIC PLANE.

(*b.*)

FIGURE 64.

Black.



White.

White to play and mate in one move.

A Complex Strategic Plane is one that can be commanded by the Prime Tactical Factor only when aided by both the supporting and the Auxiliary Factors.

Complex Strategic Planes are governed by the following

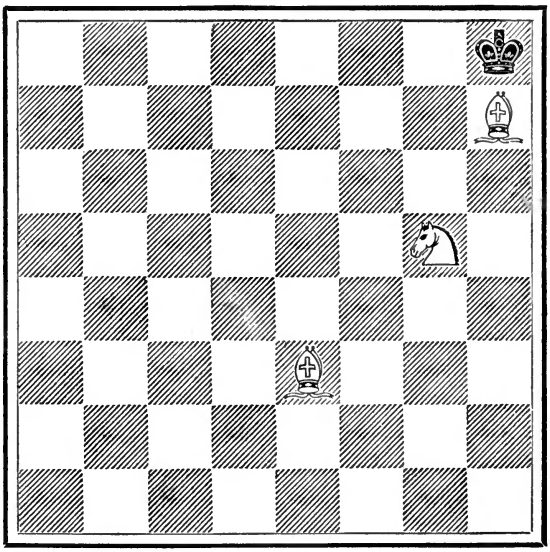
PRINCIPLE.

Whenever the net value of the offensive force radiated by three or more kindred pieces is equal to the net mobility of the Objective Plane, then the given kindred pieces may checkmate the adverse King.

A COMPLEX STRATEGIC PLANE.

FIGURE 65.

Black.



White.

White to play and mate in one move.

PLANE TOPOGRAPHY.

The following topographical features are peculiar to Strategic Planes: —

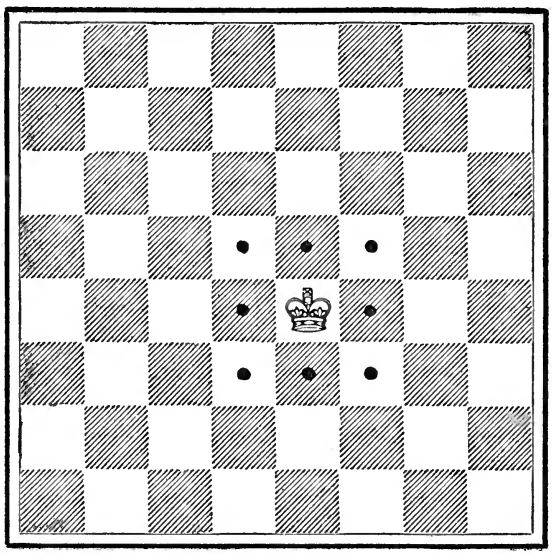
1. Objective Plane.
2. Objective Plane Commanded.
3. Point of Lodgment.
4. Point of Impenetrability.
5. Like Point.
6. Unlike Point.

The Objective Plane is composed of the point occupied by the adverse King, together with the immediately adjacent points.

THE OBJECTIVE PLANE.

FIGURE 66.

Black.



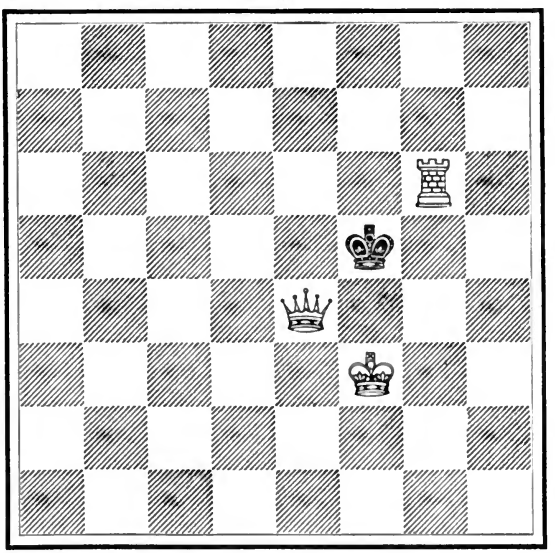
White.

NOTE. — The Objective Plane is commanded when it contains no point open to occupation by the adverse King, by reason of the radii of offence operated against it by hostile pieces.

AN OBJECTIVE PLANE COMMANDED.

FIGURE 67.

Black.



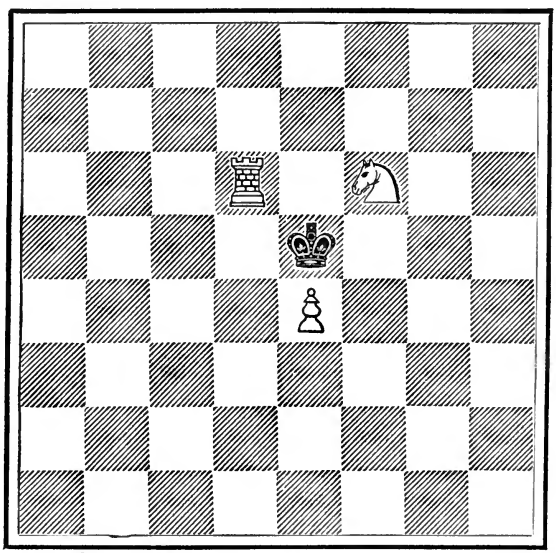
White.

A Point of Lodgment is a term used to signify that a kindred piece other than the Prime Tactical Factor has become posted upon a point which is contained within the Objective Plane.

A POINT OF LODGMENT.

FIGURE 68.

Black.



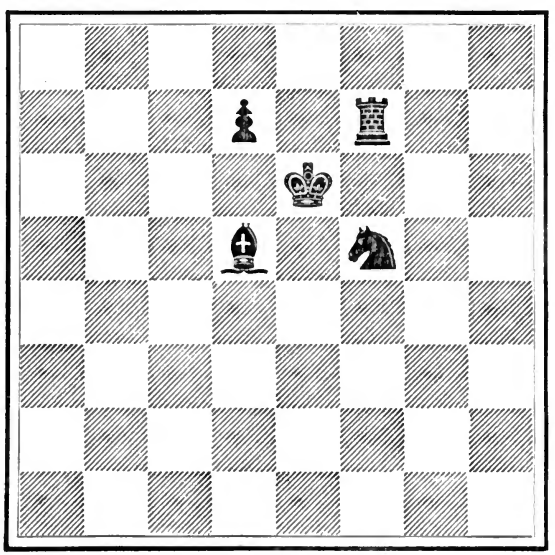
White.

A Point of Impenetrability is any point in the Objective Plane which in a given situation is occupied by an adverse piece other than the King.

A POINT OF IMPENETRABILITY.

FIGURE 69.

Black.



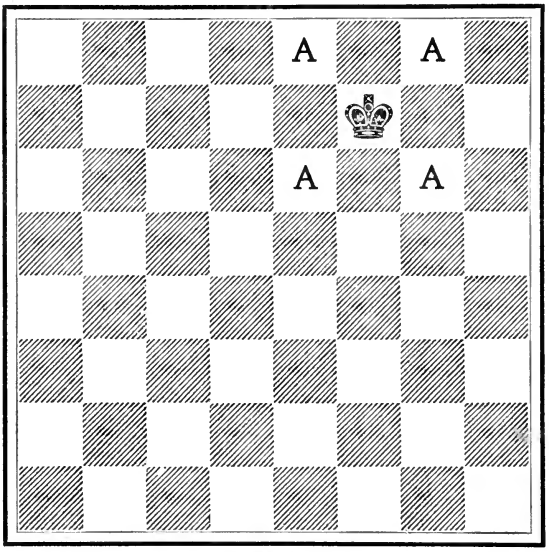
White.

A Like Point is any point in the Objective Plane of the same color as that upon which the adverse King is posted.

LIKE POINTS.

FIGURE 70.

Black.



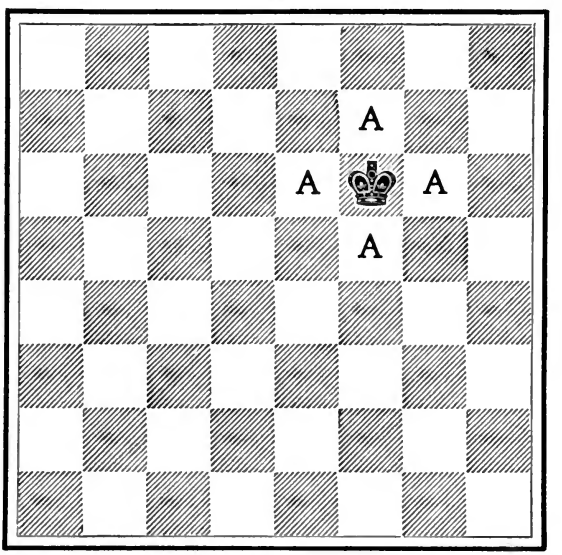
White.

An Unlike Point is any point in the Objective Plane of opposite color to that upon which the adverse King is posted.

UNLIKE POINTS.

FIGURE 71.

Black.



White.

BASIC PROPOSITIONS OF MAJOR TACTICS.

Following are the twelve basic propositions of Major Tactics. Upon these are founded all tactical combinations which are possible in chess play. The first four propositions govern all calculations whose object is to win adverse pieces; the next seven govern all calculations whose object is to queen one or more pawns; and the final one governs all those calculations whose object is to checkmate the adverse King.

A Geometric Symbol is *positive* (G. S. P.) when the piece to which it appertains has the right of move in the given situation; otherwise it is *negative* (G. S. N.)

In all situations wherein the Exposed Piece has the right of move the Point Material is *active* (P. M. A.), and in all other cases the Point Material is *passive* (P. M. P.).

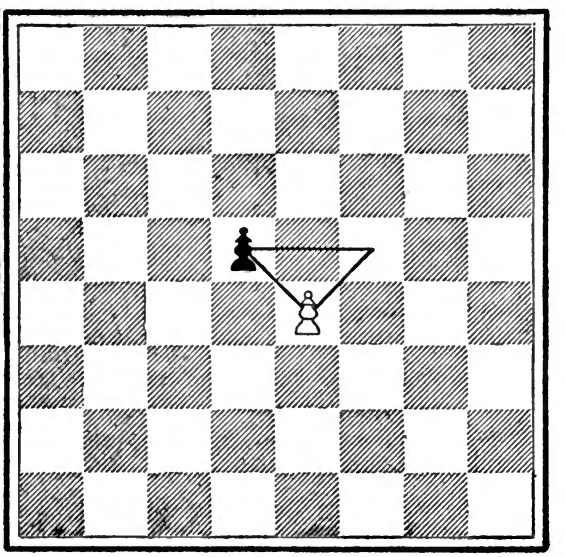
PROPOSITION I. — THEOREM.

Given a Geometric Symbol Positive (G. S. P.) having one or more Points Material (P. M.), then the kindred Prime Tactical Factor (P. T. F.) wins an adverse piece.

FIGURE 72.

(*a.*)

Black.



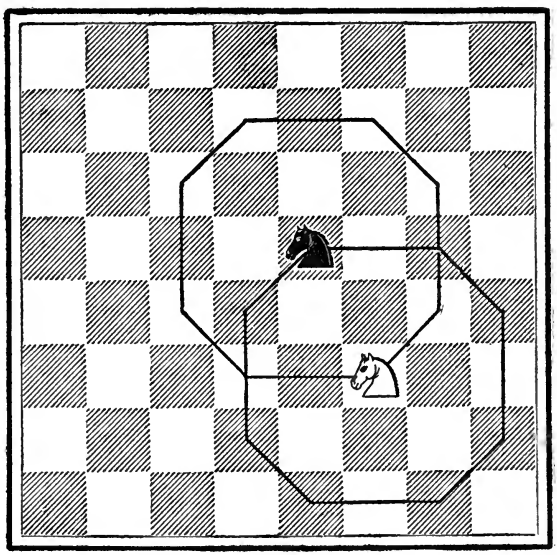
White.

Either to move and win a piece.

FIGURE 73.

(*b.*)

Black.



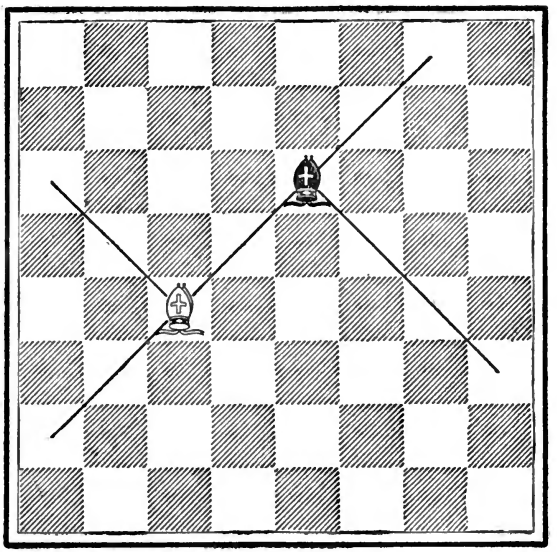
White.

Either to move and win a piece.

FIGURE 74.

(c.)

Black.



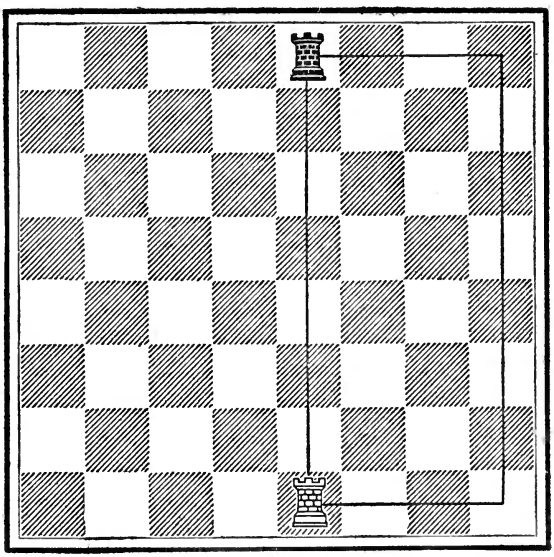
White.

Either to move and win a piece.

FIGURE 75

(*d.*)

Black.



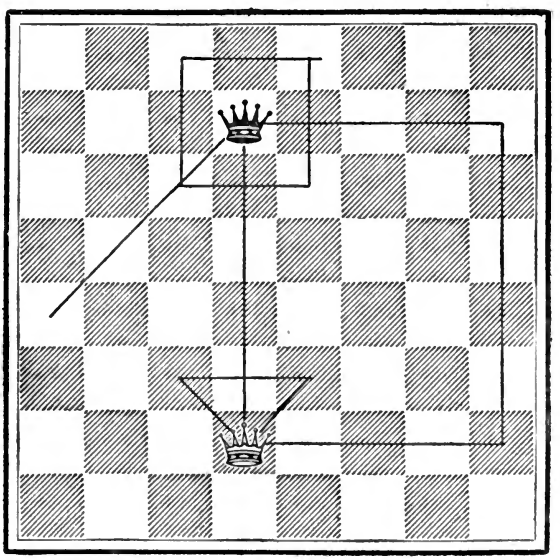
White.

Either to move and win a piece.

FIGURE 76.

(*e.*)

Black.



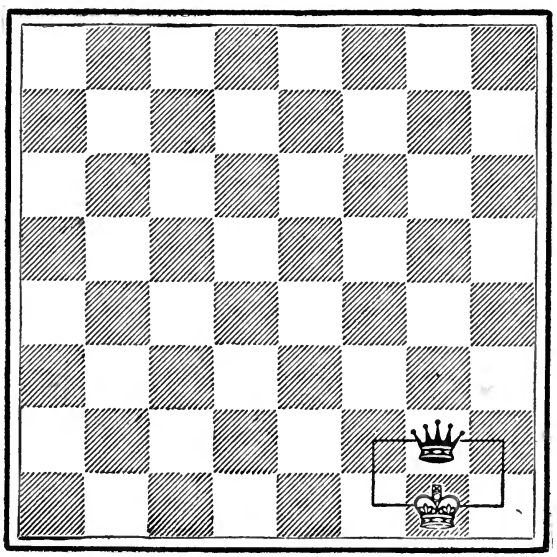
White.

Either to move and win a piece.

FIGURE 77.

(*f.*)

Black.



White.

Either to move and win a piece.

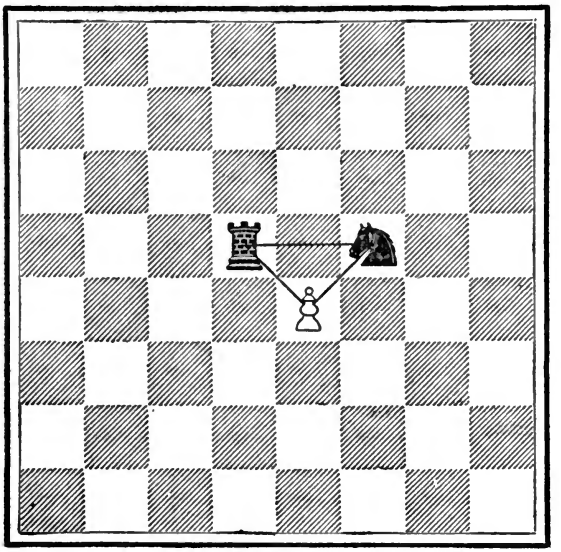
PROPOSITION II. — THEOREM.

Given a Geometric Symbol Negative (G. S. N.) having two or more Points Material Active (P. M. A.), then the kindred Prime Tactical Factor (P. T. F.) wins an adverse piece.

FIGURE 78.

(*a.*)

Black.



White.

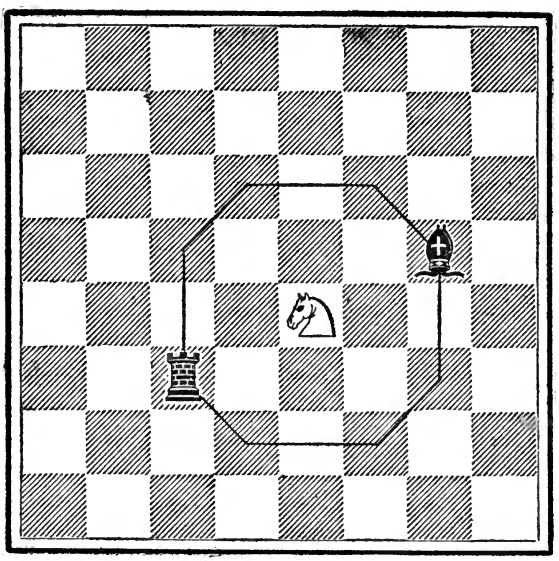
Black to move, white to win a piece.

NOTE — Black, even with the move, can vacate only one of the vertices of the white geometric symbol. Therefore the remaining black piece is lost, according to Prop. I.

FIGURE 79.

(*b.*)

Black.



White.

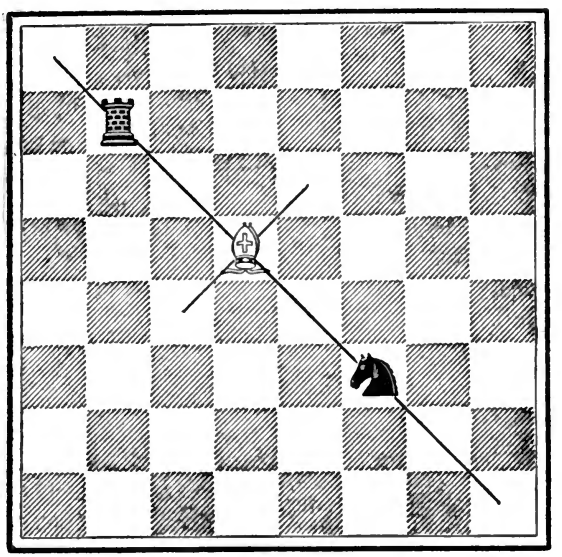
Black to move, white to win a piece.

NOTE. — Black, even with the move, cannot vacate the perimeter of the white Knight's octagon; consequently the remaining black piece is lost, according to Prop. I.

FIGURE 80.

(*c.*)

Black.



White.

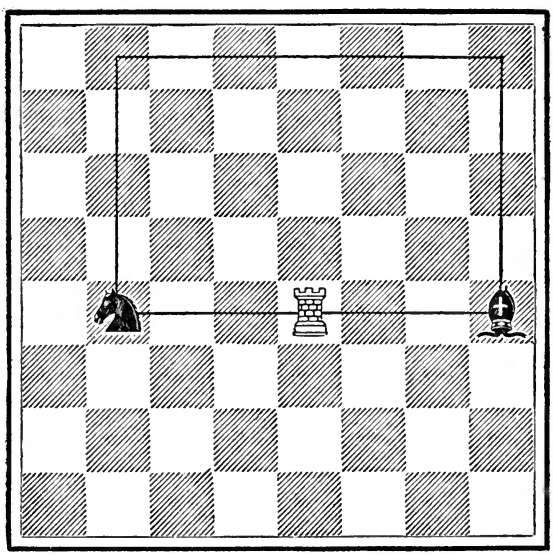
Black to move, white to win a piece.

NOTE. — Black, even with the move, cannot vacate the side of the white Bishop's triangle; consequently the remaining black piece is lost, according to Prop. I.

FIGURE 81.

(*d.*)

Black.



White.

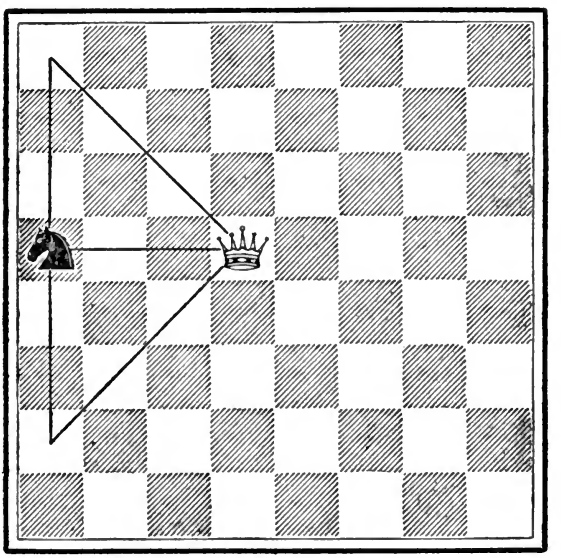
Black to move, white to win a piece.

NOTE. — The Knight cannot in one move support the Bishop, neither can the Bishop occupy its K 2 or K 8 to support the Knight, as these points are commanded by the white Rook.

FIGURE 82.

(*e.*)

Black.



White.

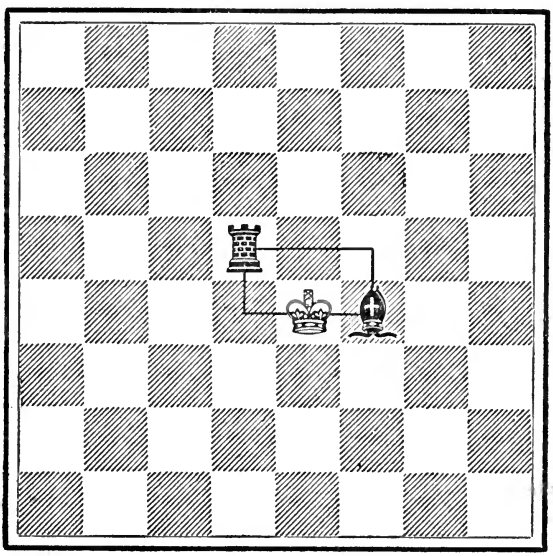
Black to move, white to win a piece.

NOTE. — Obviously all those points to which the black Knight can move are commanded by the white Queen.

FIGURE 83.

(*f.*)

Black.



White.

Black to move, white to win a piece.

NOTE. — The Bishop cannot support the Rook, neither can the Rook occupy K B 4 in support of the Bishop, as that point is commanded by the white King.

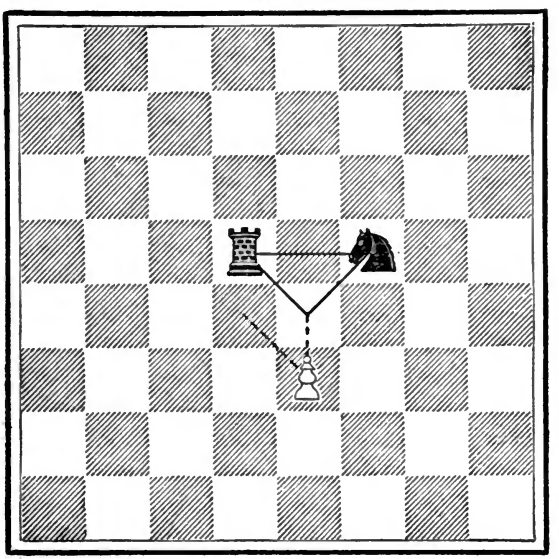
PROPOSITION III. — THEOREM.

Given a Sub-Geometric Symbol Positive (S. G. S. P.) having two or more Points Material Passive (P. M. P.), then the kindred Prime Tactical Factor (P. T. F.) wins an adverse piece.

FIGURE 84.

(*a.*)

Black.



White.

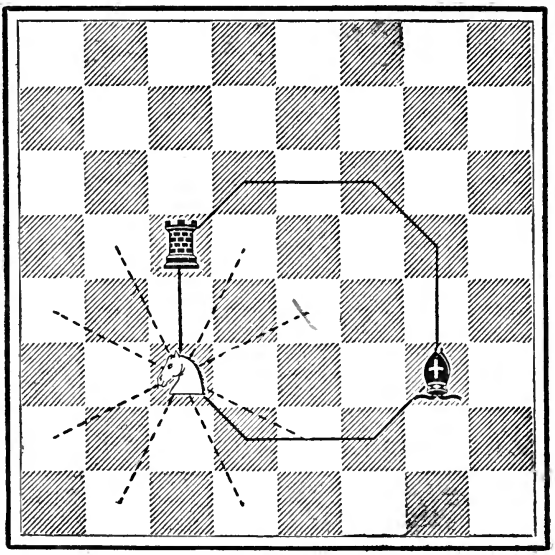
White to move and win a piece.

NOTE. — The pawn, having the move, advances along its Front Offensive to that point where its logistic symbol and its geometric symbol intersect.

FIGURE 85.

(*b*.)

Black.



White.

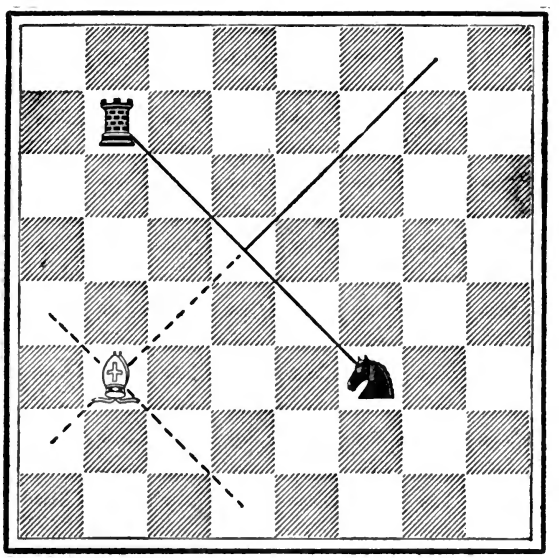
White to move and win a piece.

NOTE. — The Point of Command is that centre or vertex where the logistic symbol and the geometric symbol intersect.

FIGURE 86.

(*c.*)

Black.



White.

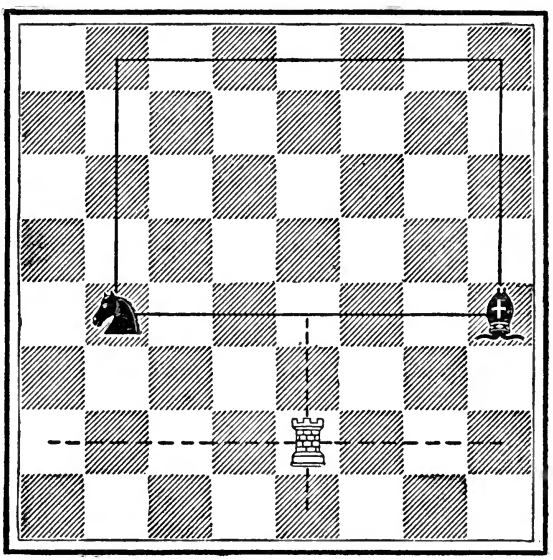
White to move and win a piece.

NOTE. — The diagram illustrative of any position always should contain the logistic symbol and the geometric symbol appertaining to the Prime Tactical Factor.

FIGURE 87.

(*d.*)

Black.



White.

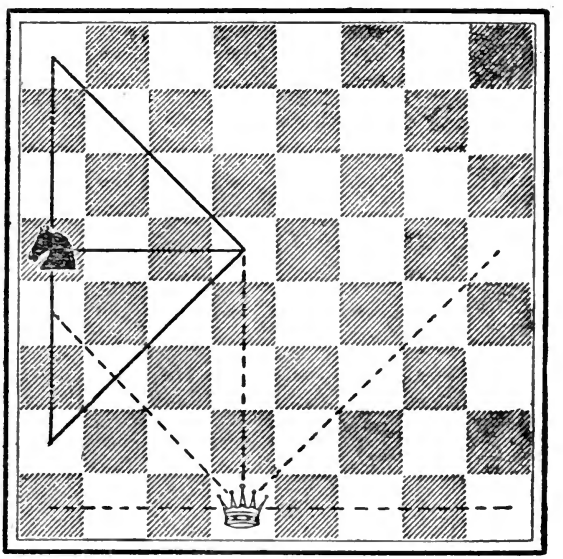
White to move and win a piece.

NOTE. — The Point of Command and the points material are all contained in the same sides of the Rook's quadrilateral.

FIGURE 88.

(*e.*)

Black.



White.

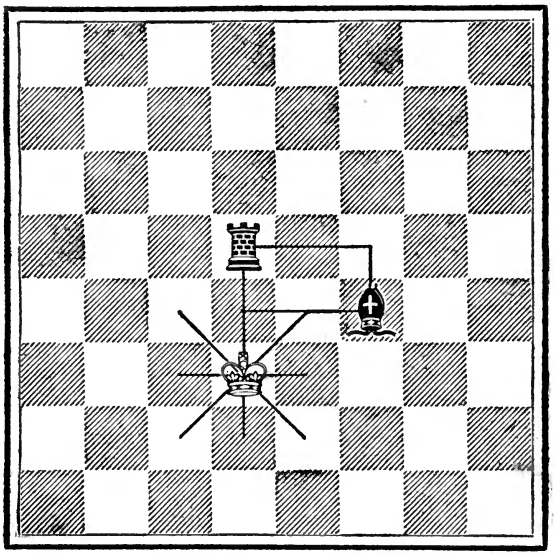
White to move and win a piece.

NOTE. — The Point of Command is White's Q 5 as the logistic radii at Q R 4 do not intersect the centre or a vertex of the geometric symbol.

FIGURE 89.

(*e.*)

Black.



White.

White to move and win a piece.

NOTE. — The white King cannot move to Q 4 nor to K 3, on account of the resistance of the black pieces. But White wins, as the latter do not command K 4.

PROPOSITION IV. — THEOREM.

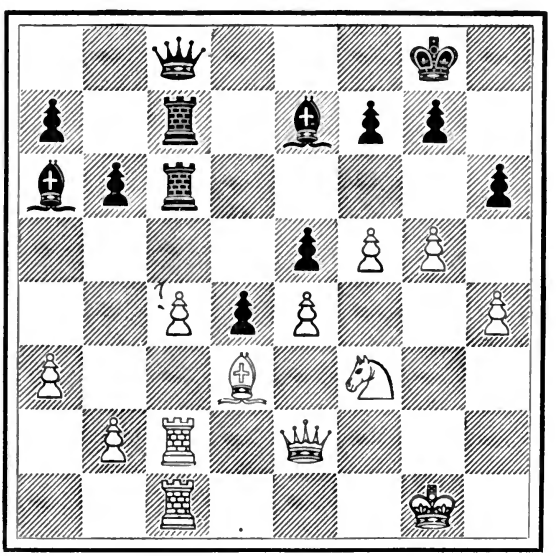
Given a piece which is both attacked and supported, to determine whether the given piece is defended.

DEFENDED PIECE.

FIGURE 90.

(*a.*)

Black.



White.

NOTE.— With or without the move the white Q B P is defended. (See Rule page 109.)

SOLUTION.

X = Any piece employed in the given evolution.

Y = Piece attacked.

$B + R + R + Q$ = Attacking Pieces.

$B + R + R + Q$ = Supporting Pieces.

$B + R + R + Q = B + R + R + Q$ = Construction of the inequality.

$4X$ = Number of terms contained in left side.

$4X$ = Number of terms contained in right side.

$(B + R + R + Q) - (B + R + R + Q)$ = Value of unlike terms.

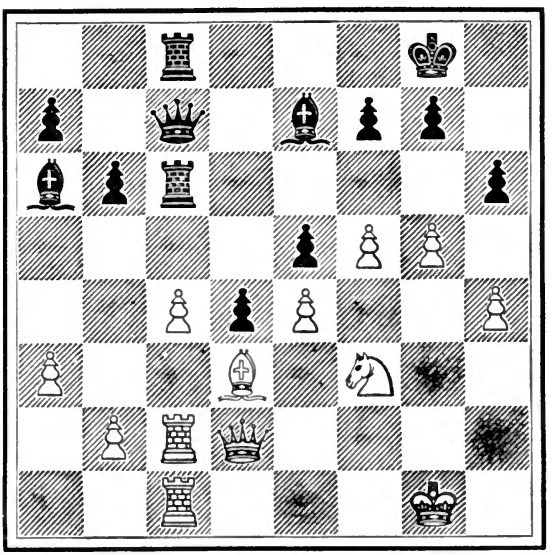
Thus, the given piece is defended, as the number of terms and the sum of their potential complements are equal.

DEFENDED PIECE.

FIGURE 91.

(*b.*)

Black.



White.

NOTE. — With or without the move the white Q B P is defended.

SOLUTION.

X = Any piece employed in the given evolution.

Y = Piece attacked.

B + R + Q + R = Attacking Pieces.

B + R + R = Supporting Pieces.

B + R + Q + R > B + R + R = Construction of the inequality.

4 X = Number of terms contained in left side.

3 X = Number of terms contained in right side.

4 X − 3 X = Excess of left-side terms.

(B + R) − (B + R) = Value of like terms.

Q − R = Value of first unlike term.

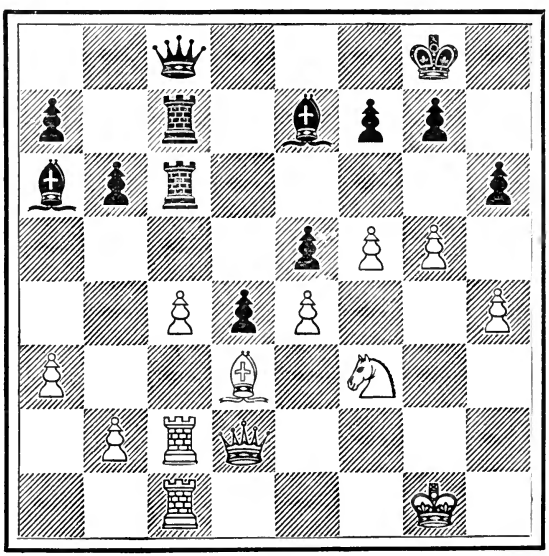
Thus the given piece is defended, for, although the number of terms contained in the left side of the inequality exceeds by one the number of terms contained in the right side, the third term of the inequality is an unlike term, of which the initial contained in the left side is greater than the initial contained in the right side.

UNDEFENDED PIECE.

FIGURE 92.

(*a.*)

Black.



White.

NOTE. — Without the move the white Q B P is undefended.

SOLUTION.

X = Any piece employed in the given evolution.
Y = Piece attacked.
$B + R + R + Q$ = Attacking Pieces.
$B + R + R$ = Supporting Pieces.
$B + R + R + Q > B + R + R$ = Construction of the inequality.
$4X$ = Number of terms contained in left side.
$3X$ = Number of terms contained in right side.
$4X - 3X$ = Excess of left-side terms.
$(B + R + R) - (B + R + R)$ = Value of unlike terms.

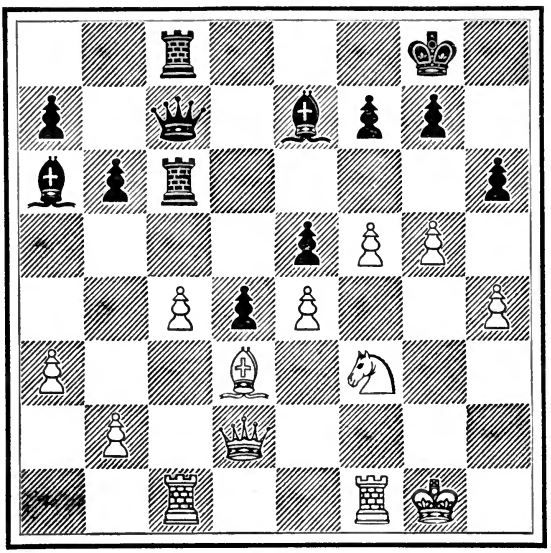
Thus, there being no unlike terms, and the number of pieces contained in the left side exceeding the number of pieces contained in the right side, the given piece is undefended.

UNDEFENDED PIECE.

FIGURE 93.

(*b.*)

Black.



White.

NOTE. — Without the move the white Q B P is undefended.

SOLUTION.

X = Any piece employed in the given evolution.

Y = Piece attacked.

B + R + Q + R = Attacking Pieces.

B + R = Supporting Pieces.

B + R + Q + R > B + R = Construction of the inequality.

4 X = Number of terms contained in left side.

2 X = Number of terms contained in right side.

4 X − 2 X = Excess of left-side terms.

(B + R) − (B + R) = Value of unlike terms.

Thus the given piece is undefended as there are no unlike terms, and the number of terms on the left side exceeds the number of terms on the right side.

RULE.

I. Construct an algebraic inequality having on the left side the initials of the attacking pieces arranged in the order of their potential complements from left to right; and on the right side the initials of the Supporting Pieces arranged in the order of their potential complements, and also from left to right; then, —

If the sum of any number of terms taken in order from left to right on the left side of this inequality is not greater than the sum of the same number of terms taken in order from left to right on the right side, and if none of the terms contained in the left side are less than the like terms contained in the right side, the given piece is defended.

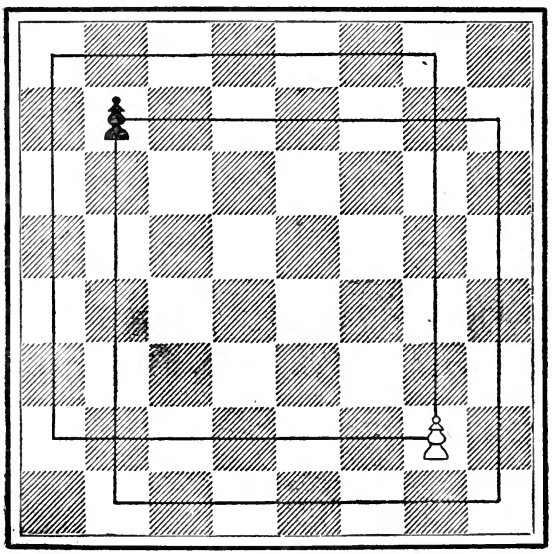
II. In all cases wherein two or more of the Attacking Pieces operate coincident radii of offence, or two or more of the Supporting Pieces operate coincident radii of defence, those pieces must be arranged in the construction of the inequality, not in the order of their potential complements, but in the order of their proximity to the given piece. This applies only to the position of their initials with respect to each other; the pieces need not necessarily lie in sequence; but in all cases the initial of that piece of highest potential complement should be placed as far to the right on either side of the equality as possible.

PROPOSITION V. THEOREM.

Given a Square of Progression (S. P.) whose net area is equal to the net area of the adverse square of Progression, then, if the Primary Origins (P. O.) are situated neither upon the same nor adjacent verticals, and if the Points of Junction are situated not upon the same diagonal, the kindred Prime Tactical Factor (P. T. F.) queens against an adverse pawn.

FIGURE 94.

Black.



White.

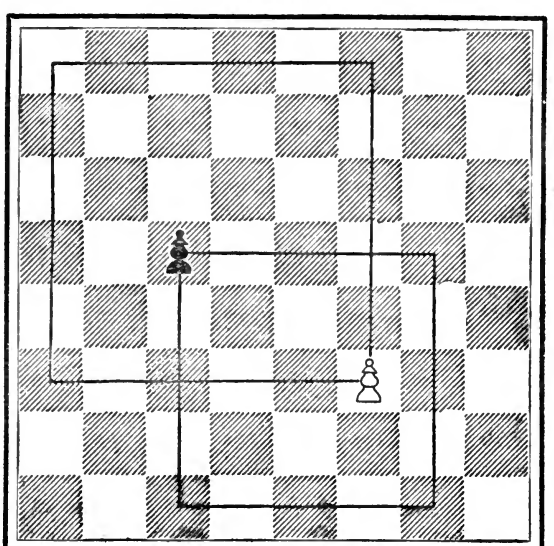
Either to move and queen a pawn.

PROPOSITION VI. THEOREM.

Given a Square of Progression Positive (S. P. P.) whose net area is greater by not more than one horizontal than the net area of the adverse Square of Progression Negative (S. P. N.), then, if the Primary Origins (P. O.) are situated neither upon the same nor adjacent verticals, and the points of junction are situated not upon the same diagonals, the kindred Prime Tactical Factor (P. T. F.) queens against an adverse pawn.

FIGURE 95.

Black.



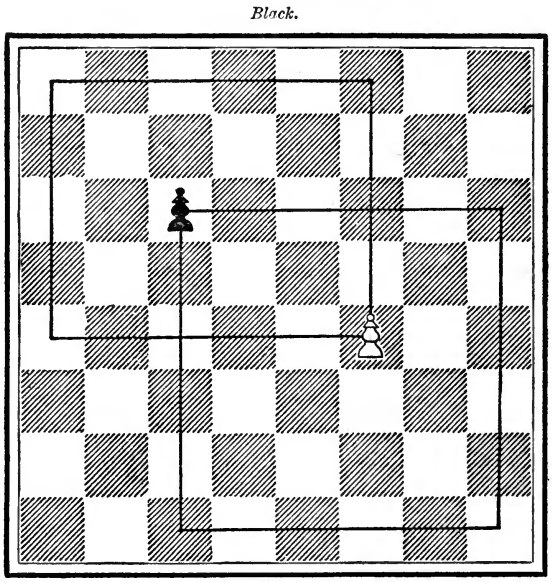
White.

White to move, both to queen a pawn.

PROPOSITION VII. THEOREM.

Given a Square of Progression Positive (S. P. P.) whose net area is less by one horizontal than the net area of the adverse Square of Progression Negative (S. P. N.), then, if the Primary Origins (P. O.) are situated not upon the same nor adjacent verticals, the kindred Prime Tactical Factor (P. T. F.) will queen and will prevent the adverse pawn from queening.

FIGURE 96.



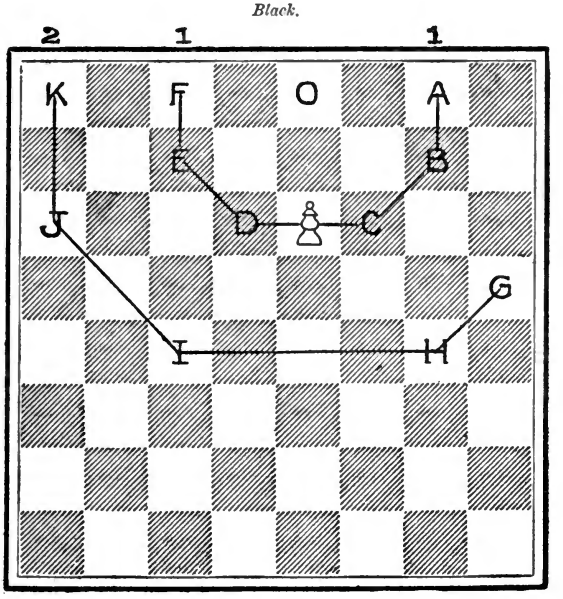
White to move and queen a pawn and prevent the adverse pawn from queening.

PROPOSITION VIII.—THEOREM.

Given a Square of Progression Positive (S. P. P.) opposed to a knight's octagon, then, if the Disturbing Factor (D. F.) is situated without the corresponding Knight's octagon, or within the corresponding Knight's octagon, but without the Knight's octagon of next lower radius and on a square of opposite color to the square occupied by the kindred pawn, the Prime Tactical Factor (P. T. F.) queens against the adverse Knight.

FIGURE 97.

(*a.*)

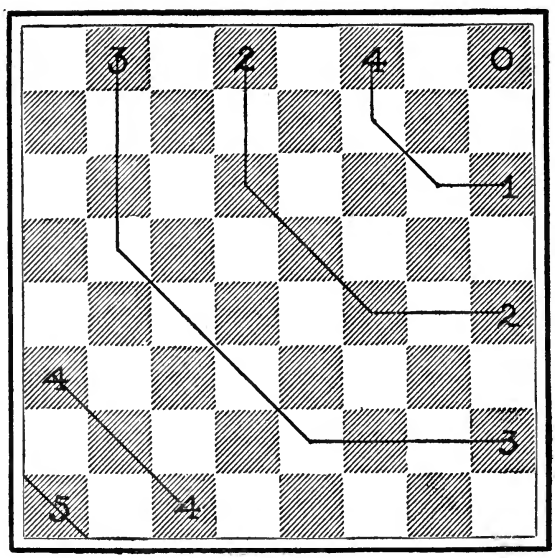


White to move and queen a pawn.

FIGURE 98.

(*b.*)

Black.



White.

White to move and queen a pawn.

DEMONSTRATION. — A pawn queens without capture against an adverse Knight, if, in general, the Knight is situated (1) without the corresponding Knight's octagon, or (2) within the corresponding Knight's octagon, but without the Knight's octagon of next lower radius and on a square of opposite color to the square occupied by the pawn.

In diagram No. 97, take the queening point (o) of the pawn as a centre, and make a Knight's move to B,

C, D, and E; connect these points by straight lines and draw the vertical lines B A and E F; then the figure A B C D E F (or 1–1) is part of an eight-sided figure, which may be called, for brevity's sake, a Knight's octagon of single radius.

Similarly, describe the figure G H I J K (or 2–2) whose sides are parallel to those of the figure 1–1, but whose vertices are two Knight's moves distance from the point o; this figure may be called a Knight's octagon of double radius.

Now, if the pawn has the first move it will be seen, first, that a Knight situated anywhere within the octagon 1–1, *provided* it be not *en prise* of the pawn (an assumption common to all situations), nor at K B 8 nor Q 8 (an exception peculiar to this situation), will be able to stop the pawn, either by preventing it from queening or by capturing it after it has queened; secondly, that a Knight situated anywhere without the octagon 2–2 will be unable to stop the pawn; and thirdly, that a Knight situated anywhere between the octagon 1–1 and 2–2, will be able to stop the pawn if it starts from a square of the same color as that occupied by the pawn (white, in this instance), but unable to do so if it starts from a square of the opposite color (in this instance, black).

From diagram No. 98, it is apparent that four Knight's diagrams can be drawn on the surface of the chess-board, and the perimeter of a fifth may be considered as passing through the lower left-hand corner. In this diagram the white pawn is supposed to start from a point on the King's Rook's file.

If the pawn starts from K R 6, a black square, and having two moves to make in reaching the queening point, the Knight must be situated as in Fig. No. 98, within the octagon of single radius, or on a black square

between the octagon of single radius and the octagon of double radius.

If the pawn starts from K R 5, a white square, and having three moves to make, the Knight must be situated within the octagon of double radius, or on a white square between the octagon of double radius and the octagon of triple radius (3–3).

If the pawn starts from K R 4, a black square, and having four moves to make, the Knight must be situated within the octagon of triple radius, or in a black square between the octagon of triple radius and the octagon of quadruple radius (4–4).

If the pawn starts from K R 3, a white square, having five moves to make, the Knight must be situated within the octagon of quadruple radius, or on a white square between the octagon of quadruple radius and the octagon of quintuple radius (5). In this last case it appears that the only square from whence the Knight can stop the pawn is Black's Q R 8.

If the pawn starts from K R 2, it may advance two squares on the first move, and precisely the same conditions exist as if it started from K R 3.

Still another octagon may be imagined to exist on the board, — namely, the octagon of null radius, or simply the queening point (o), which is the centre of each of the other octagons. This being understood, it follows that if the pawn starts from K R 7, a white square, and having one move to make, the Knight must be situated within the octagon of null radius (o), *i. e.* at White's K R 8, or, on a white square between the octagon of null radius and the octagon of single radius, *i. e.* at K Kt 6 or at K B 7.

From these data a general law may be deduced. In order to abbreviate the enunciation of this law, it is well

to lay down these definitions: By "the Knight's octagon corresponding to a pawn," is meant that Knight's octagon whose centre is the queening point of the pawn, and whose radius consists of a number of Knight's moves equal to the number of moves to be made by the pawn in reaching its queening point; and by "the Knight's octagon of next lower radius," is meant that Knight's octagon whose centre is the queening point of the pawn, and whose radius consists of a number of Knight's moves one less than the number of moves to be made by the pawn, in reaching its queening point. The law, then, is as follows: —

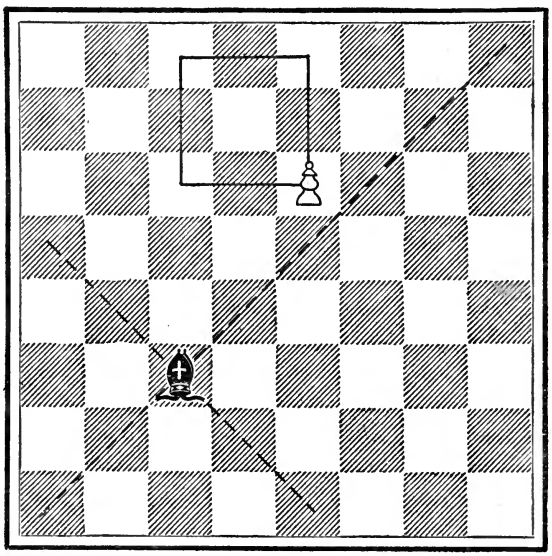
A Knight can stop a pawn that has the move and is advancing to queen, if the Knight is situated between the Knight's octagon corresponding to the pawn and the Knight's octagon of next lower radius, and on a square of the same color as that occupied by the pawn, or if the Knight is situated within the Knight's octagon of next lower radius; *provided*, that the Knight be not *en prise* to the pawn, nor (if the pawn is at its sixth square) *en prise* to the pawn after the latter's first move.

PROPOSITION IX.—THEOREM.

Given a Square of Progression Positive (S. P. P.) opposed to a Bishop's triangle, then, if the given square of progression is the smallest or the smallest but one, and if the Point of Junction is a square of opposite color to that occupied by the hostile integer, the kindred Prime Tactical Factor (P. T. F.) queens without capture against the adverse Bishop.

FIGURE 99.

Black.



White.

White to move and queen a pawn.

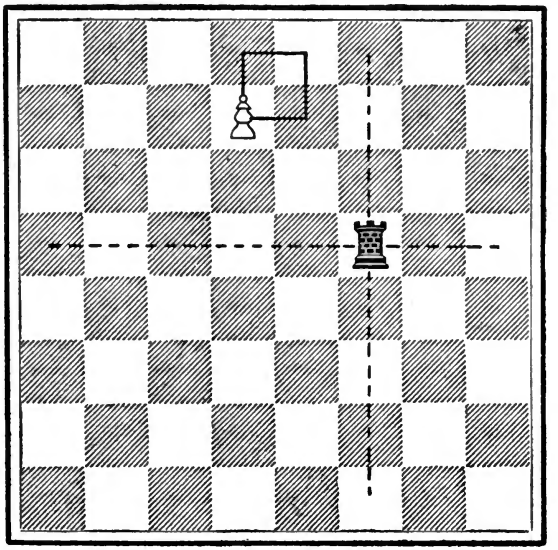
PROPOSITION X.—THEOREM.

Given a Square of Progression Positive (S. P. P.) opposed to a Rook's quadrilateral or to a Queen's polygon, then, if the square of progression is the smallest possible, and if the hostile integer does not command the Point of Junction, the kindred Prime Tactical Factor queens without capture against the adverse Rook or Queen.

FIGURE 100.

(*a.*)

Black.



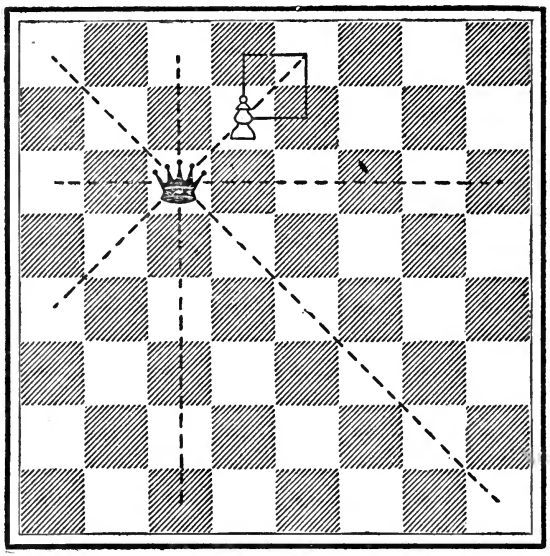
White.

White to move and queen a pawn.

FIGURE 101.

(*b.*)

Black.



White.

White to move and queen a pawn.

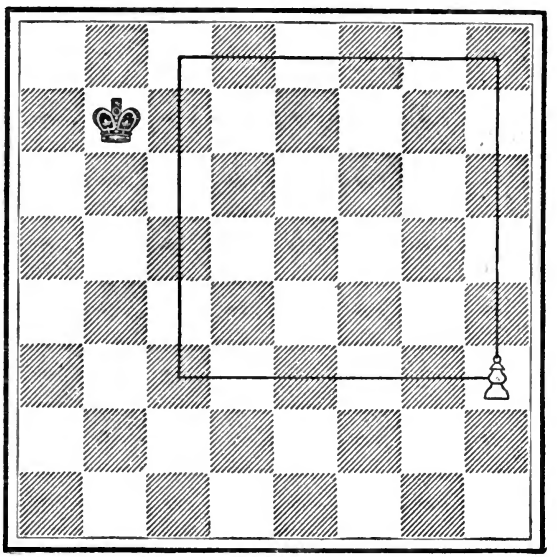
PROPOSITION XI.

Given a Square of Progression Positive (S. P. P.) opposed to a King's rectangle; then, if the given King is not posted on a point within the given square of progression, the given pawn queens without capture against the adverse King.

FIGURE 102.

(*a.*)

Black.



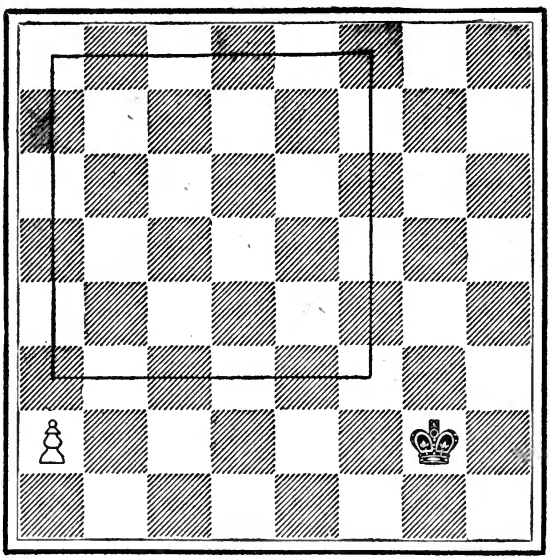
White.

White to move and queen a pawn.

FIGURE 103.

(*b.*)

Black.



White.

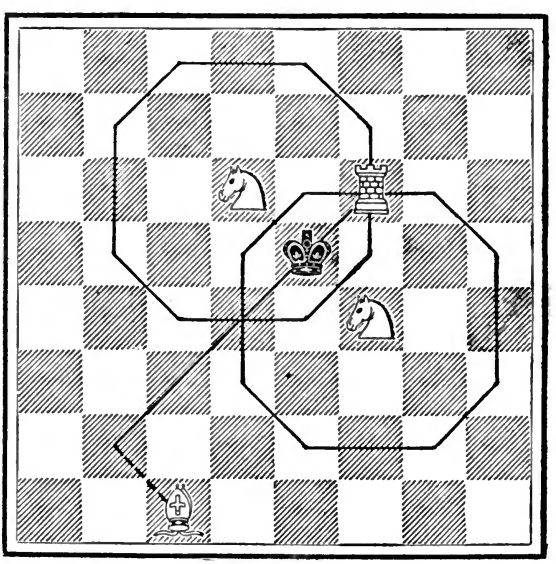
White to move and queen a pawn.

PROPOSITION XII. — THEOREM.

Given a Geometric Symbol Positive (G. S. P.) or a combination of Geometric Symbols Positive which is coincident with the Objective Plane; then, if the Prime Tactical Factor (P. T. F.) can be posted at the Point of Command, the adverse King may be checkmated.

FIGURE 104.

Black.



White.

White to play and mate in one move.

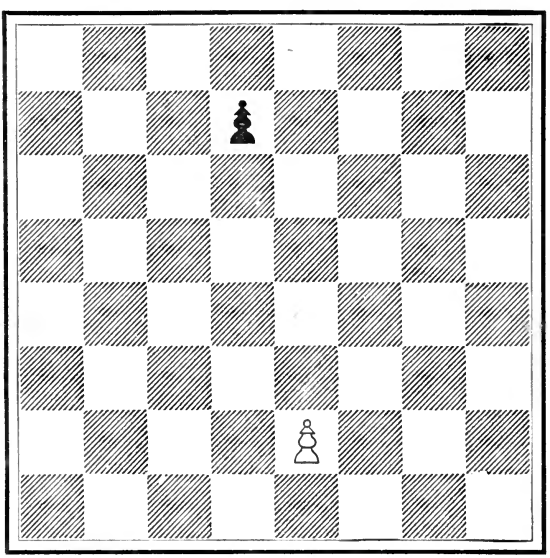
SIMPLE TACTICAL PLANES.

EVOLUTION No. 1.

FIGURE 105.

Pawn *vs.* Pawn.

Black.



White.

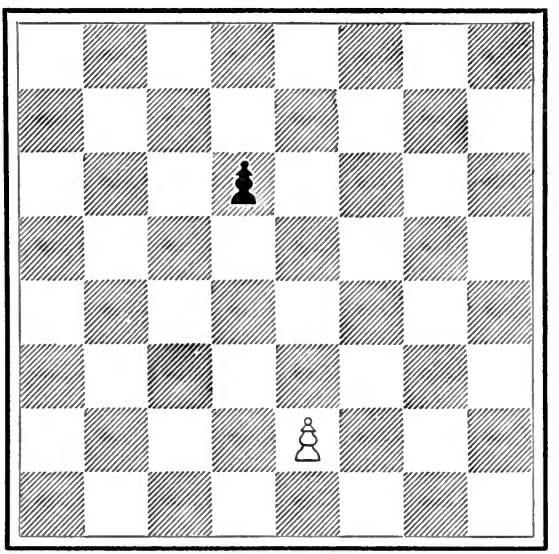
When two opposing pawns are situated on adjacent verticals and each on its Primary Base Line, that side which has not the move wins the adverse pawn.

EVOLUTION No. 2.

FIGURE 106.

Pawn *vs.* Pawn.

Black.



White.

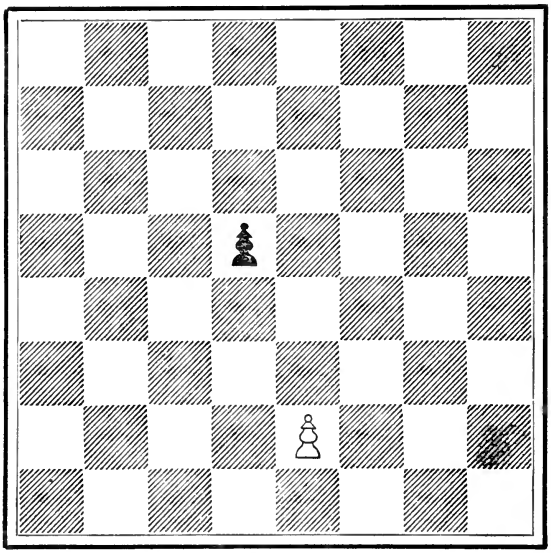
A pawn posted at its Primary Base Line and either with or without the move, wins an adverse pawn situated at the intersection of an adjacent vertical with the sixth horizontal.

EVOLUTION No. 3.

FIGURE 107.

Pawn *vs.* Pawn.

Black.



White.

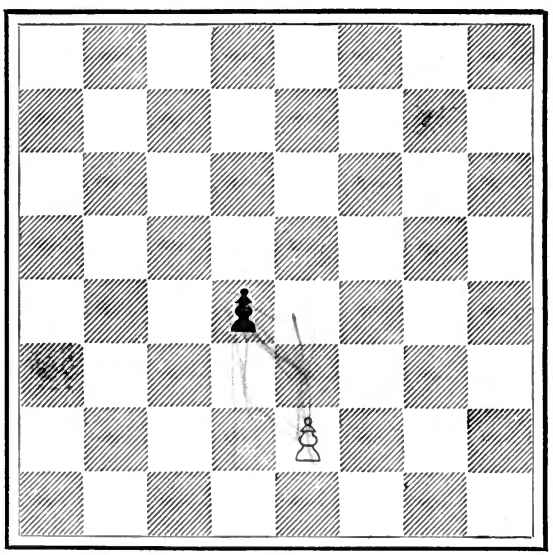
When the number of horizontals between two opposing pawns situated on adjacent verticals is even, that pawn which has the move wins the adverse pawn.

EVOLUTION No. 4.

FIGURE 108.

Pawn *vs.* Pawn.

Black.



White

When the number of horizontals between two opposing pawns situated on adjacent verticals, is odd, that pawn which has not to move wins the adverse pawn; *provided* the position is not that of Evolution No. 2.

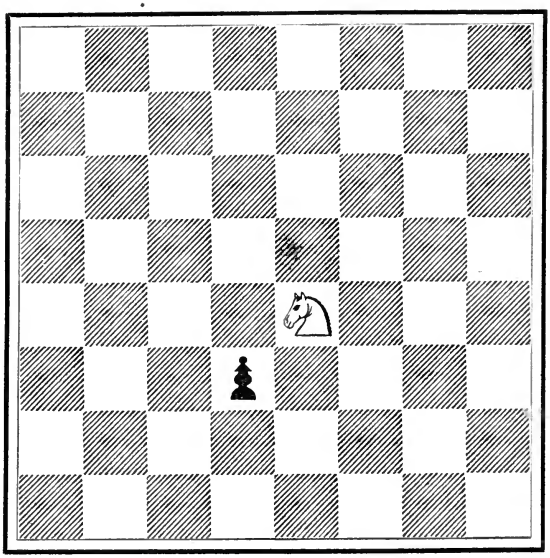
IF W PAWN MOVES 2 SQUARES
B CAN TAKE W EN PASSANT

EVOLUTION No. 5.

FIGURE 109.

Pawn *vs.* Knight.

Black.



White.

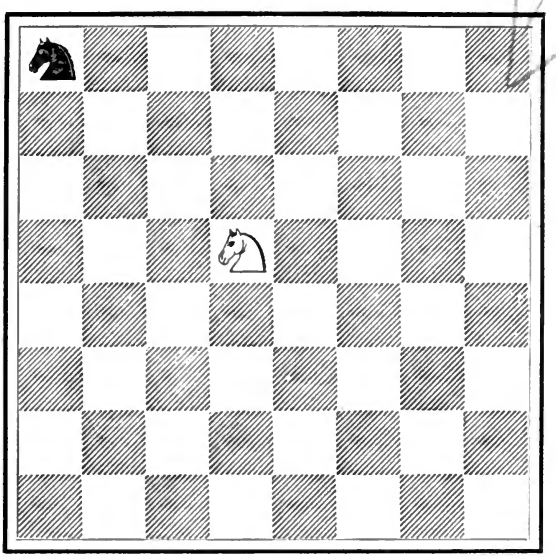
Whenever a pawn altitude is intersected by the periphery of an adverse Knight's octagon, then, if the pawn has not crossed the point of intersection, the adverse Knight wins the given pawn.

EVOLUTION No. 6.

FIGURE 110.

Knight *vs.* Knight.

Black.



White.

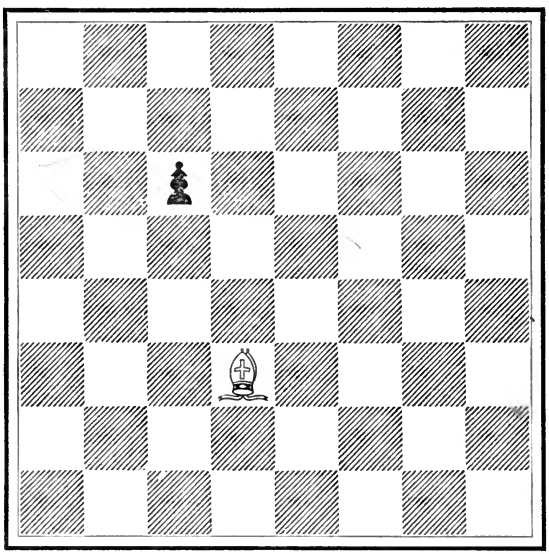
A Knight posted at R 1 or R 8, and having to move, is lost if all the points on its periphery are contained in an adverse Knight's octagon.

EVOLUTION No. 7.

FIGURE 111.

Bishop *vs.* Pawn.

Black.



White.

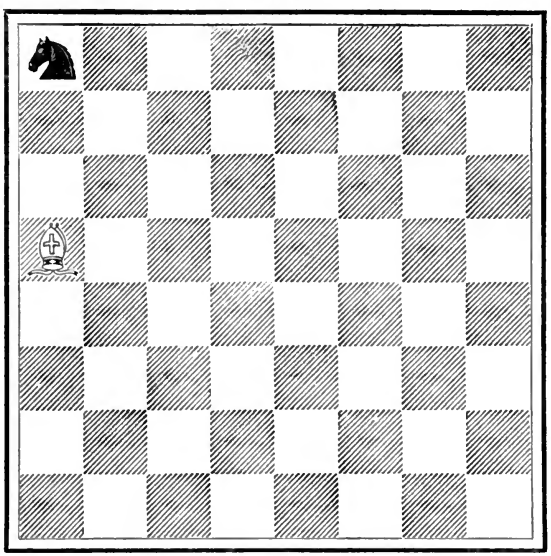
Whenever a pawn's altitude intersects a Bishop's triangle, then, if the pawn has not crossed the point of intersection, the adverse Bishop wins the given pawn.

EVOLUTION No. 8.

FIGURE 112.

Bishop *vs.* Knight.

Black.



White.

A Knight posted at R 1 or R 8, and with or without the move, is lost if all the points on its periphery are contained in the same side of the Bishop's triangle.

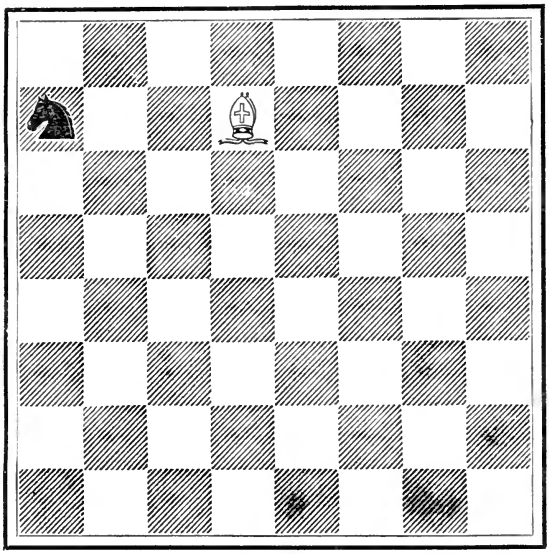
NOTE. — The B will equally win if posted at Q 8.

EVOLUTION No. 9.

FIGURE 113.

Bishop *vs.* Knight.

Black.



White.

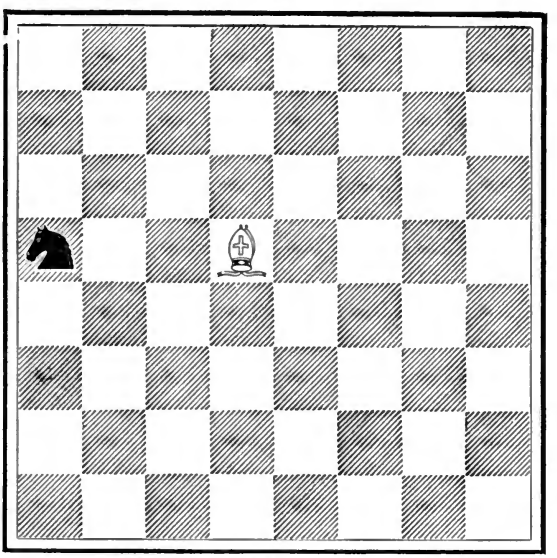
A Knight posted at R 2, R 7, Kt 1, or Kt 8, and having to move, is lost, if all the points on its periphery are contained in the sides of an adverse Bishop's triangle.

EVOLUTION No. 10.

FIGURE 114.

Bishop *vs.* Knight.

Black.



White.

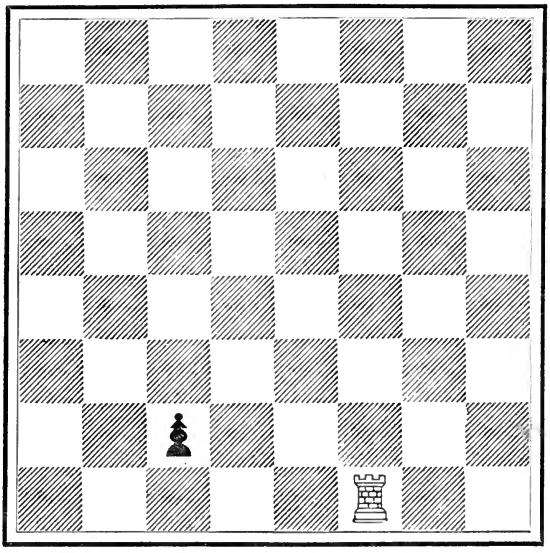
A Knight posted at R 4, R 5, K 1, K 8, Q 1, or Q 8, and having the move, is lost if all the points on its periphery are contained in the sides of an adverse Bishop's triangle.

EVOLUTION No. 11.

FIGURE 115.

Rook *vs.* Pawn.

Black.



White.

Whenever a pawn altitude intersects a Rook's quadrilateral, then, if the pawn has not crossed the point of intersection, the adverse Rook wins the given pawn.

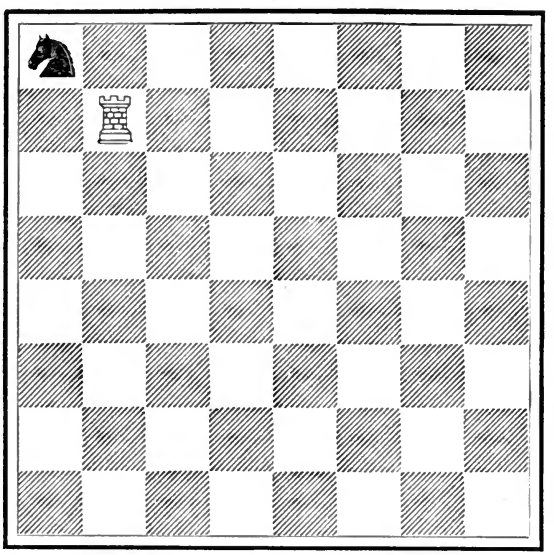
NOTE. — Obviously, whenever a pawn altitude is coincident with one side of a Rook's quadrilateral, all the points are points of intersection and the pawn is liable to capture when crossing each one.

EVOLUTION No. 12.

FIGURE 116.

Rook *vs.* Knight.

Black.



White.

A Knight posted at R 1 or R 8, and having to move, is lost if all the points on its perimeter are contained in the sides of an adverse Rook's quadrilateral.

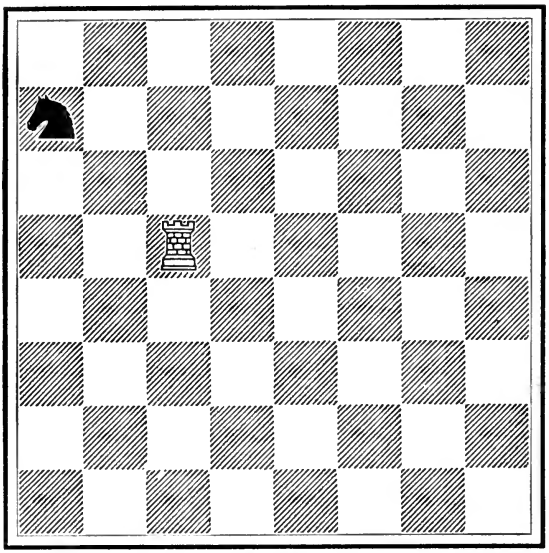
NOTE. — Obviously the R would equally win if posted at Q B 6.

EVOLUTION No. 13

FIGURE 117.

Rook *vs.* Knight.

Black.



White.

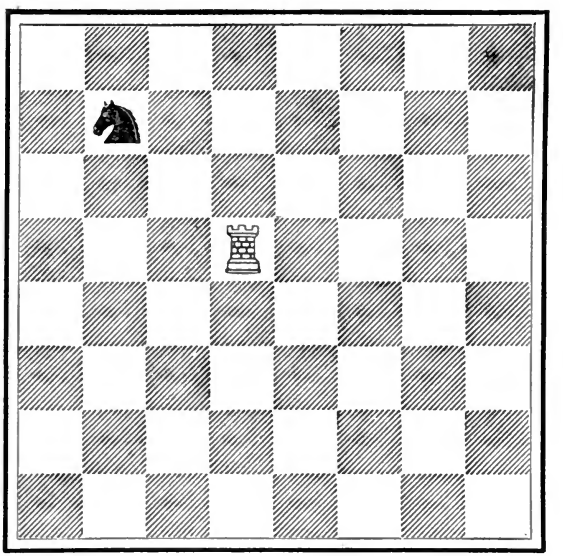
A Knight posted at R 2, R 7, Kt 1, or Kt 8, and having to move, is lost if all the points on its periphery are contained in the sides of an adverse Rook's quadrilateral.

EVOLUTION No. 14.

FIGURE 118.

Rook *vs.* Knight.

Black.



White.

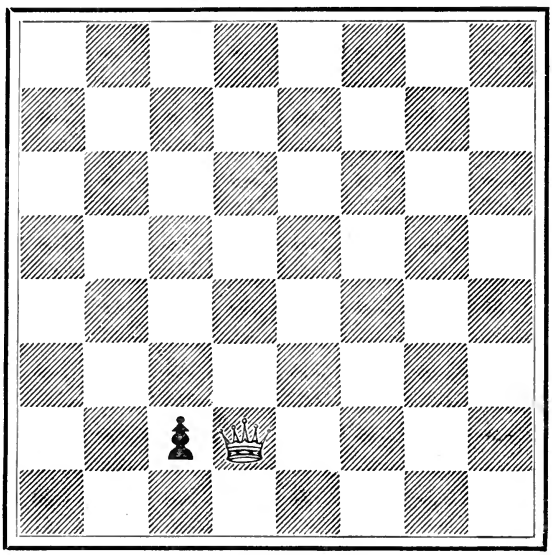
A Knight posted at Kt 2, or Kt 7, and having to move, is lost if all the points on its perimeter are contained in the sides of an adverse Rook's quadrilateral.

EVOLUTION No. 15.

FIGURE 119.

Queen *vs.* Pawn.

Black



White.

Whenever a pawn altitude intercepts an adverse Queen's polygon, then, if the pawn has not crossed the point of intersection, the adverse Queen wins the given pawn.

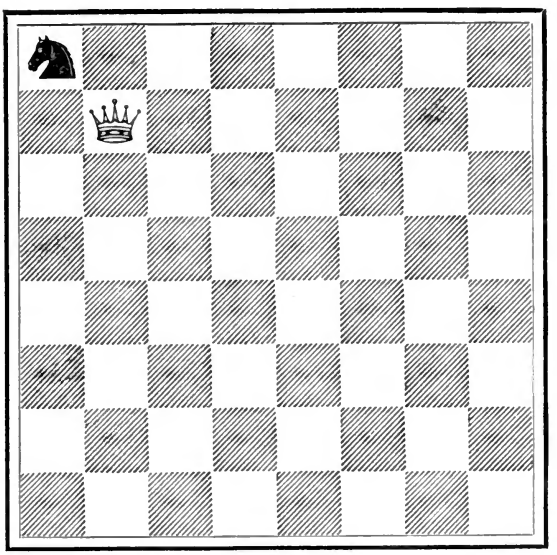
NOTE. — The Q will equally win if posted at Q B 1, Q R 1, K 1, K B 1, K Kt 1, K R 1, K 3, K B 4, K Kt 5, K R 6, Q B 3, Q Kt 2, Q R 3, Q B 4, Q B 5, Q B 6, Q B 7, or Q B 8.

EVOLUTION No. 16.

FIGURE 120.

Queen *vs.* Knight.

Black.



White.

A Knight posted at R 1 or R 8, and having to move, is lost if all the points in its perimeter are contained in the sides of an adverse Queen's polygon.

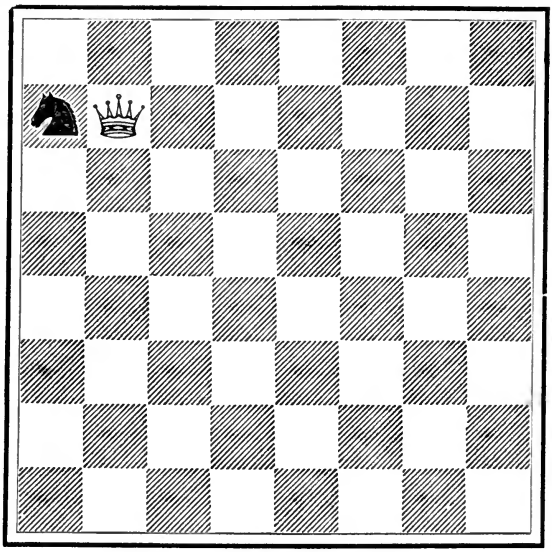
NOTE. — The Q will equally win if posted at Q R 5, Q R 7, Q Kt 8, Q B 6, Q B 5 or Q 8.

EVOLUTION No. 17.

FIGURE 121.

Queen *vs.* Knight.

Black.



White.

A Knight posted at R 2, R 7, Kt 1, or Kt 8, and having to move, is lost if all the points on its perimeter are contained in the sides of an adverse Queen's polygon.

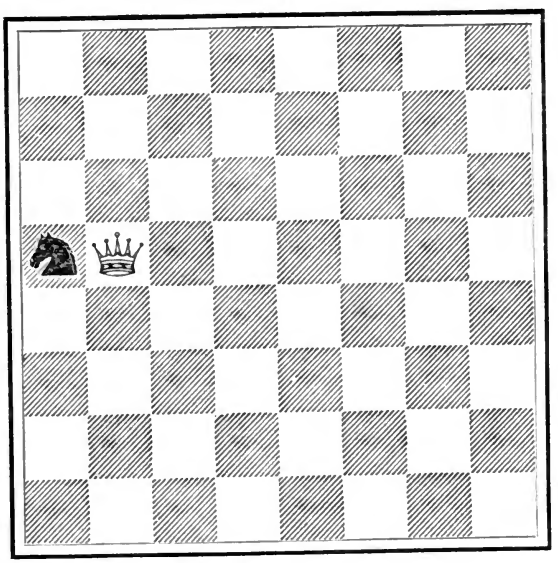
NOTE. — The Q will equally win if posted at Q 7, K 8, or Q B 5.

EVOLUTION No. 18.

FIGURE 122.

Queen *vs.* Knight.

Black.



White.

A Knight posted at R 4, R 5, K 1, K 8, Q 1, or Q 8, and having to move, is lost if all the points on its perimeter are contained in the sides of an adverse Queen's polygon.

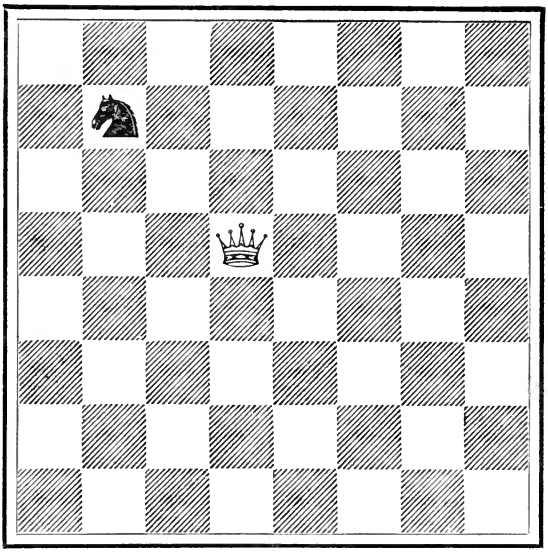
NOTE. — The Q will equally win if posted at Q 5.

EVOLUTION No. 19.

FIGURE 123.

Queen *vs.* Knight.

Black.



White.

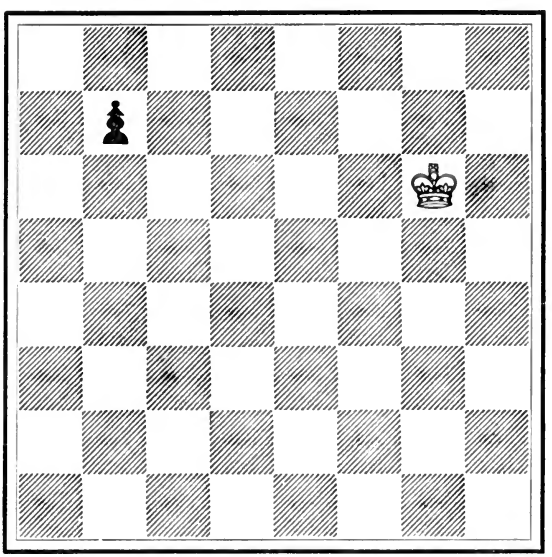
A Knight posted at Kt 2 or Kt 7, and having to move, is lost if all the points on its periphery are contained in the sides of an adverse Queen's polygon.

EVOLUTION No. 20.

FIGURE 124.

King *vs.* Pawn.

Black.



White.

Whenever the centre of a King's rectangle is contained in the square of progression of a pawn; then the adverse King wins the given pawn.

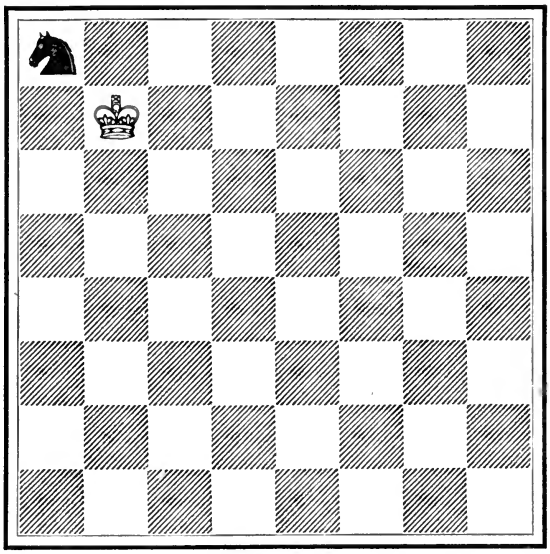
NOTE. — Obviously the King would equally win if posted on any square from the first to the third horizontal inclusive, the King's Rook's file excepted.

EVOLUTION No. 21.

FIGURE 125.

King *vs.* Knight.

Black.



White.

A Knight posted at R 1 or R 8, and having to move, is lost if all the points on its periphery are contained in the sides of an adverse King's rectangle.

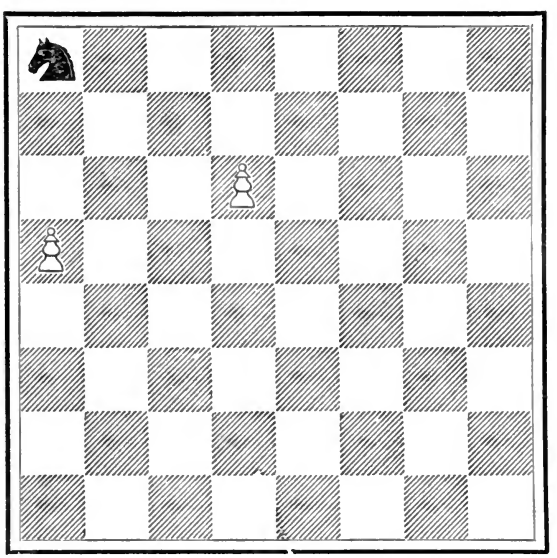
NOTE. — The K would equally win if posted at Q B 6.

EVOLUTION No. 22.

FIGURE 126.

Two Pawns *vs.* Knight.

Black.



White.

A Knight situated at R 1, and having to move, is lost if all the points on its perimeter are contained in two adverse pawn triangles.

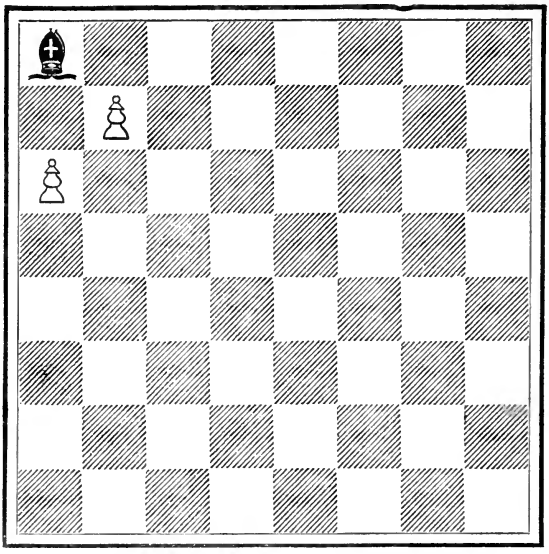
NOTE. — The pawns will equally win if posted at Q 6 and Q B 5; or at Q R 5 and Q Kt 6.

EVOLUTION No. 23.

FIGURE 127.

Two Pawns *vs.* Bishop.

Black.



White.

A Bishop posted at R 1, and with or without the move, is lost if the point which it occupies is one of the vertices of a pawn's triangle.

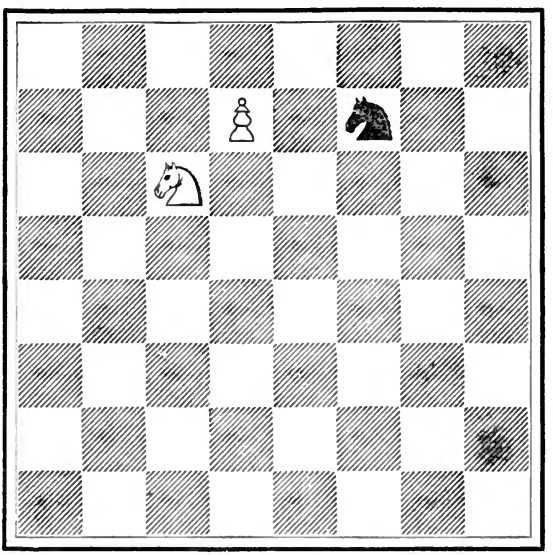
NOTE. — The pawns equally win if posted at Q B 6 and Q Kt 7.

EVOLUTION No. 24.

FIGURE 128.

Pawn and Knight *vs.* Knight.

Black.



White.

Whenever a point of junction is the vertex of a mathematical figure formed by the union of the logistic symbol of a pawn with an oblique, diagonal, horizontal, or vertical from the logistic symbol of any kindred piece; then the given combination of two kindred pieces wins any given adverse piece.

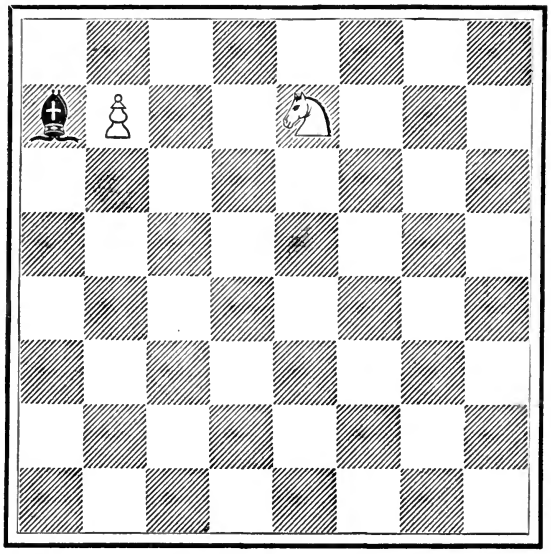
NOTE. — Obviously it is immaterial what the kindred piece may be, so long as it operates a radius of attack against the point Q 8; nor what the adverse piece may be, nor what its position, so long as it does not attack the white pawn at Q 7.

EVOLUTION No. 25.

FIGURE 129.

Pawn and Knight *vs.* Bishop.

Black.



White.

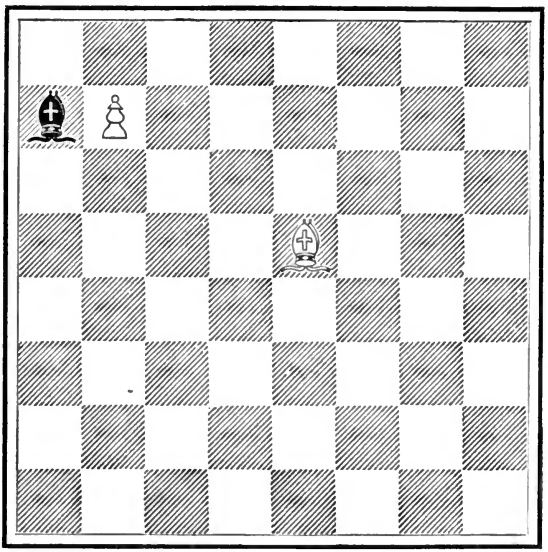
Whenever a piece defending a hostile point of junction is attacked, then, if the point of junction and all points on the periphery of the given piece wherefrom it defends the point of junction, are contained in the geometric symbol which appertains to the adverse piece, the piece defending a hostile point of junction is lost.

EVOLUTION No. 26.

FIGURE 130.

Bishop and Pawn *vs.* Bishop.

Black.



White.

Whenever an adjacent Point of Junction is commanded by a kindred piece, the adverse defending piece is lost.

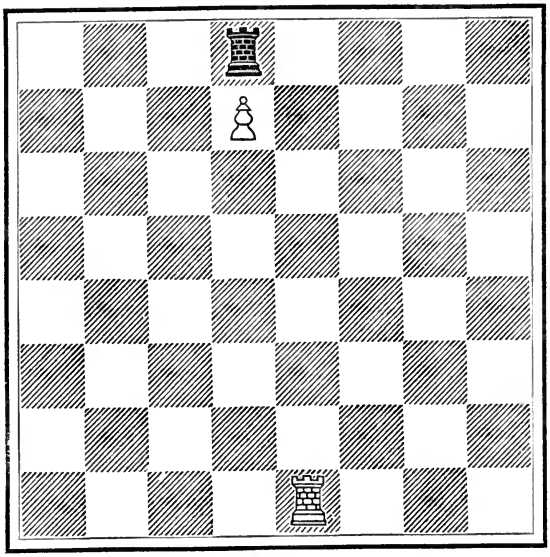
NOTE. — Obviously, it is immaterial what may be either the kindred piece or the adverse piece; the white pawn queens by force, and the kindred piece wins the adverse piece, which, of course, is compelled to capture the newly made Queen.

EVOLUTION No. 27.

FIGURE 131.

Rook and Pawn *vs.* Rook.

Black.



White.

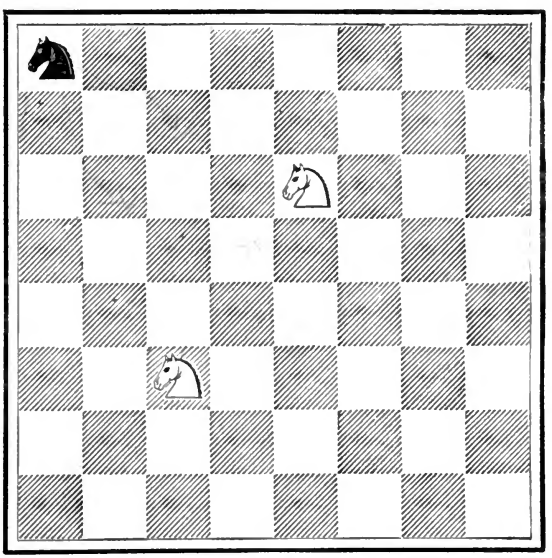
NOTE. — White wins easily by R to K 7 supporting the kindred pawn; followed by R to K 8 upon the removal of the black Rook from Q 1.

EVOLUTION No. 28.

FIGURE 132.

Two Knights *vs.* Knight.

Black.



White.

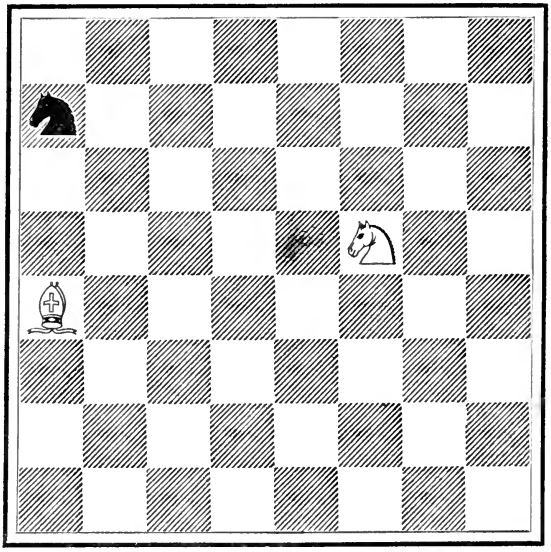
A Knight having to move is lost if all the points in its periphery are commanded by adverse pieces.

EVOLUTION No. 29.

FIGURE 133.

Knight and Bishop *vs.* Knight.

Black.



White.

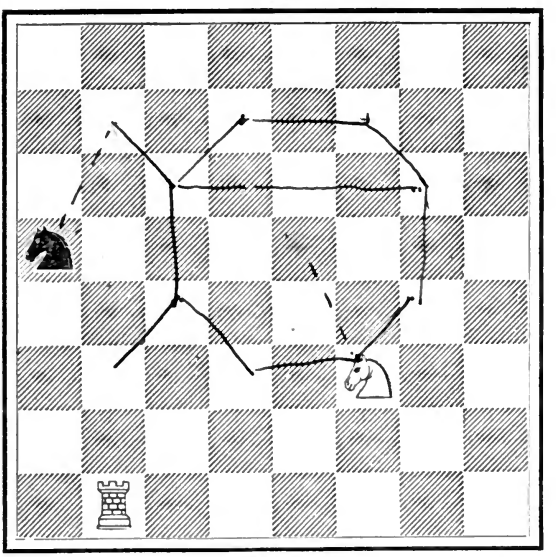
NOTE. — White wins by Kt to Q 6, or Kt to K 7, thus preventing the escape of the adverse Knight via Q B 1.

EVOLUTION No. 30.

FIGURE 134.

Rook and Knight *vs.* Knight.

Black.



White

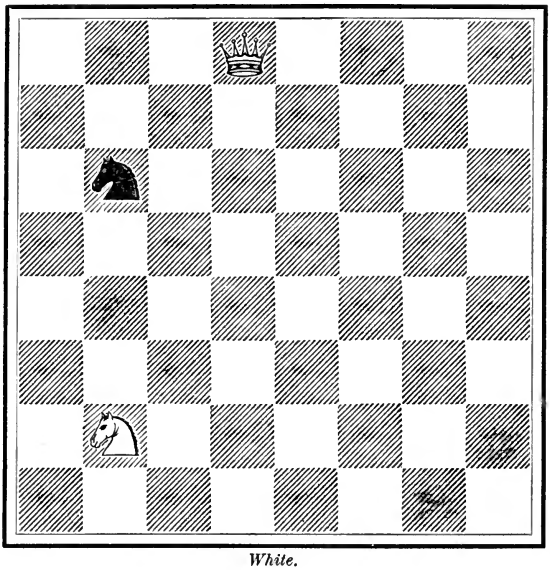
NOTE. — White wins by Kt to K 5, thus preventing the escape of the adverse Knight via Q B 3 and Q B 5.

EVOLUTION No. 31.

FIGURE 135.

Queen and Knight *vs.* Knight.

Black.



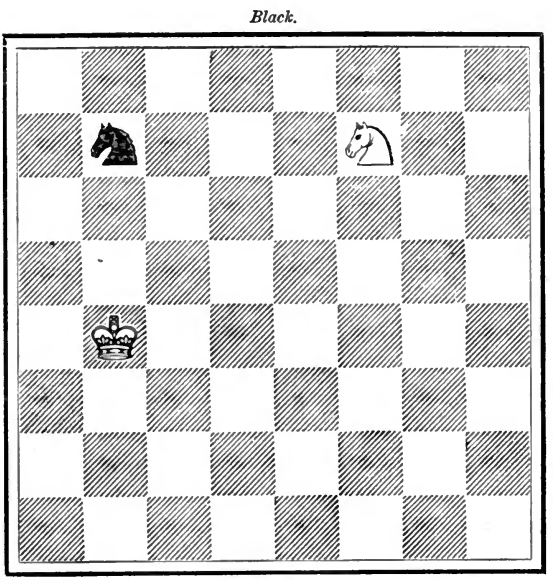
White.

NOTE. — White wins if Black has to move.

EVOLUTION No. 32.

FIGURE 136.

King and Knight *vs.* Knight.



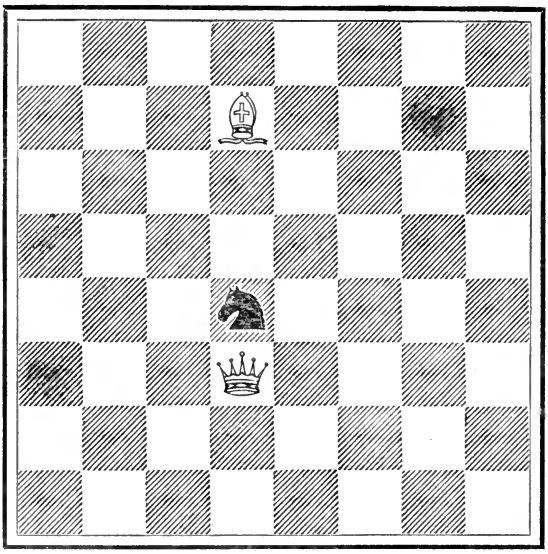
NOTE. — White wins if Black has to move.

EVOLUTION No. 33.

FIGURE 137.

Queen and Bishop *vs.* Knight.

Black.



White.

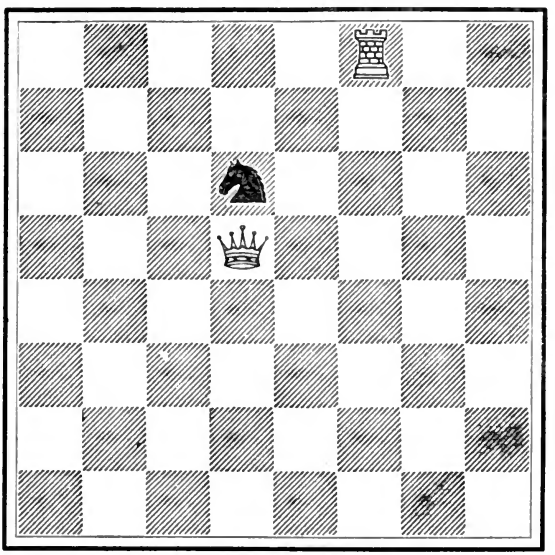
NOTE. — White wins either with or without the move.

EVOLUTION No. 34.

FIGURE 138.

Queen and Rook *vs.* Knight.

Black.



White.

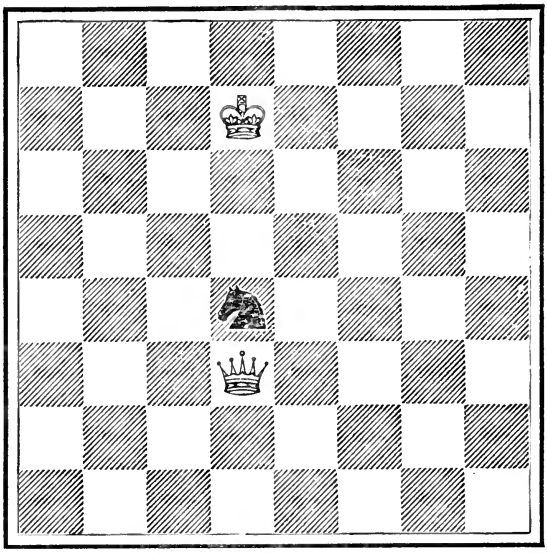
NOTE. — White wins either with or without the move.

EVOLUTION No. 35.

FIGURE 139.

King and Queen *vs.* Knight.

Black.



White.

NOTE. — White wins either with or without the move.

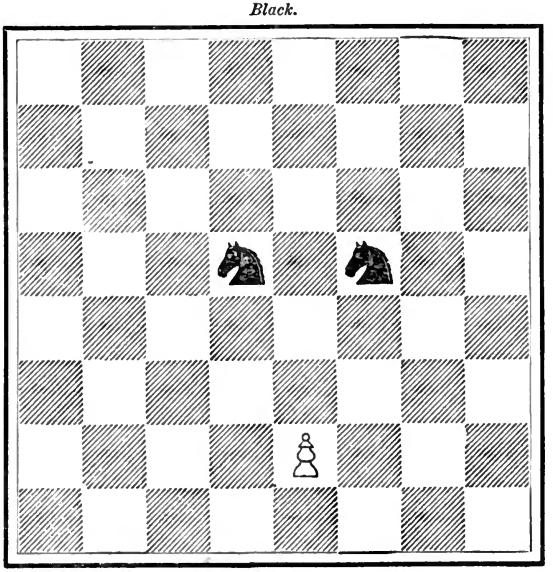
COMPOUND TACTICAL PLANES.

EVOLUTION No. 36.

FIGURE 140.

Pawn *vs.* Two Knights.

Black.



White.

Whenever two adverse pieces are posted on the vertices of a pawn's triangle and on the same horizontal, then if neither piece commands the remaining vertex, the given pawn, having to move, wins one of the adverse pieces.

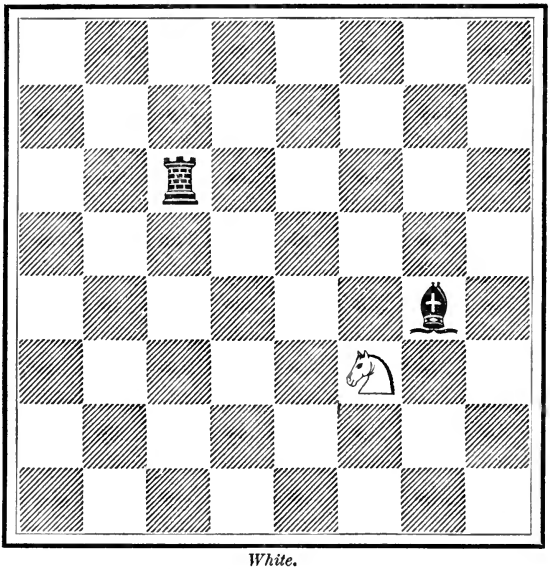
NOTE. — White wins by P to K 4. The pawn would equally win if posted at K 3.

EVOLUTION No. 37.

FIGURE 141.

Knight *vs.* Rook and Bishop.

Black.



White.

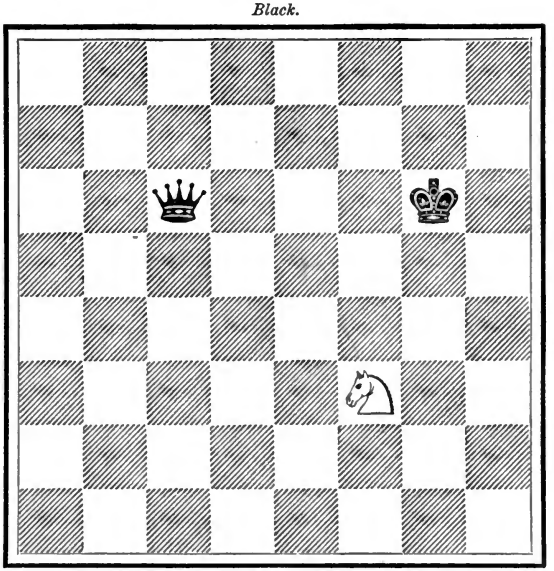
Whenever two adverse pieces are situated on the perimeter of a Knight's octagon, then if neither piece commands the centre point nor can support the other only by occupying another point on the perimeter of the said octagon, the given Knight, having to move, wins one of the adverse pieces.

EVOLUTION No. 38.

FIGURE 142.

Knight *vs.* King and Queen.

Black.



White.

Whenever the adverse King is situated on the perimeter of any opposing geometric symbol, another point on which is occupied by an unsupported adverse piece which the King cannot defend by a single move, or by another adverse piece superior in value to the attacking piece, then the given attacking piece makes a gain in adverse material.

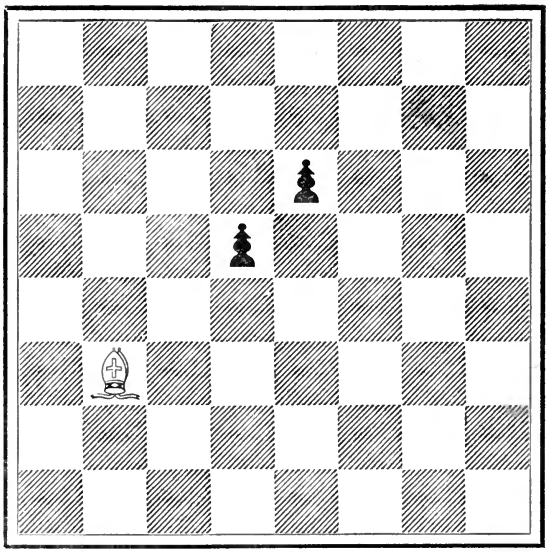
NOTE. — For after the check the white Knight takes an adverse Queen or Rook, regardless of the fact that itself is thereby lost.

EVOLUTION No. 39.

FIGURE 143.

Bishop *vs.* Two Pawns.

Black.



White.

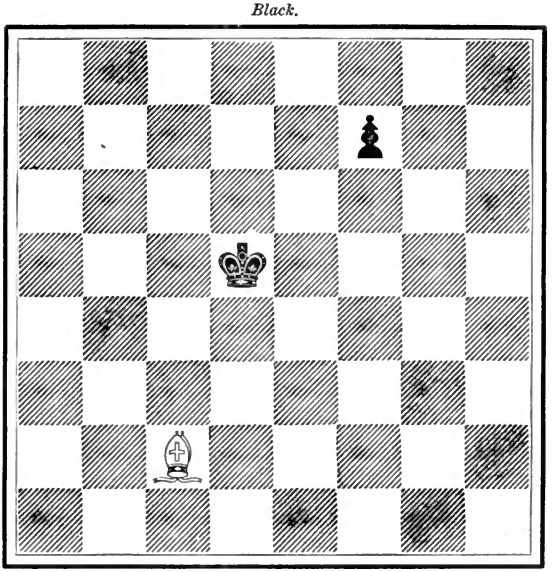
NOTE. — White wins either with or without the move.

EVOLUTION No. 40.

FIGURE 144.

Bishop *vs.* King and Pawn.

Black.



White.

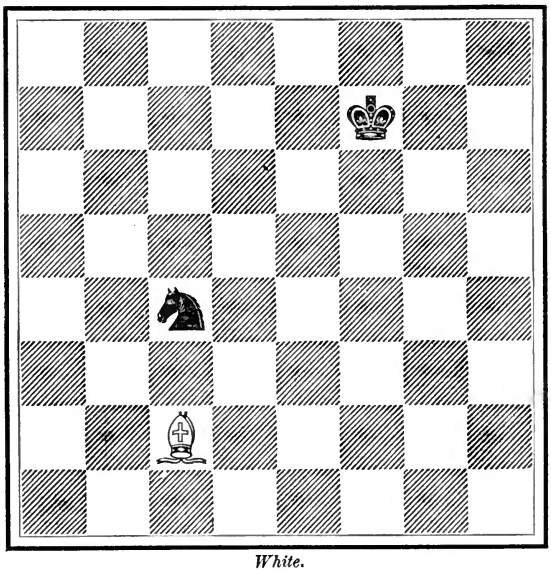
NOTE. — White wins by checking at Q Kt 3, for the black King is not able to defend the pawn in one move.

EVOLUTION No. 41.

FIGURE 145.

Bishop *vs.* King and Knight.

Black.



White.

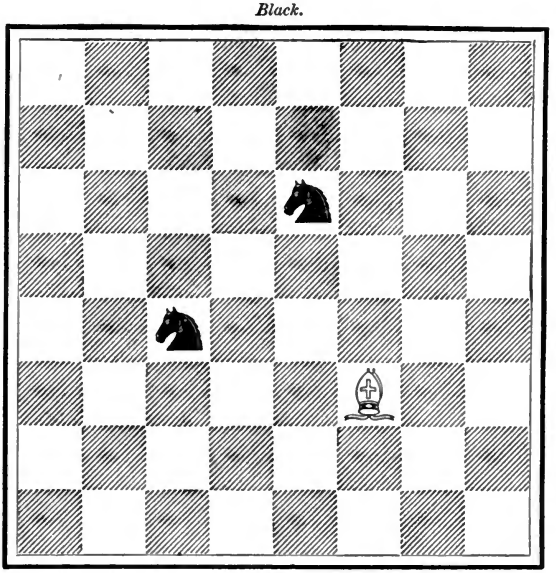
NOTE. — White wins by B to Q Kt 3 for Black is unable to defend the Knight in one move.

EVOLUTION No. 42.

FIGURE 146.

Bishop *vs.* Two Knights.

Black.



White.

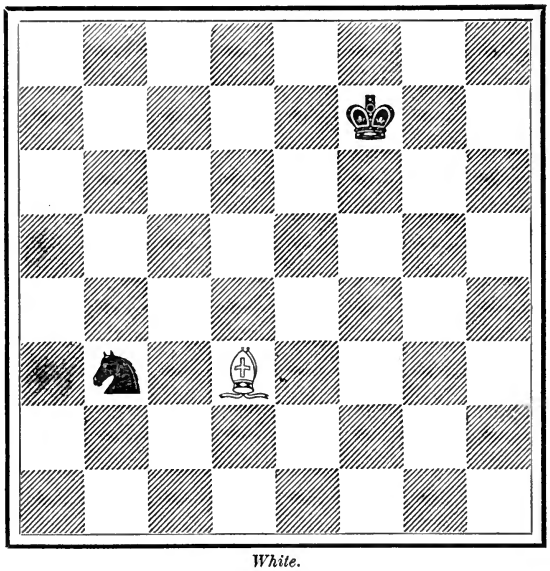
NOTE. — White wins by B to Q 5 as neither of the adverse pieces are able to support the other in a single move.

EVOLUTION No. 43.

FIGURE 147.

Bishop *vs.* King and Knight.

Black.



White.

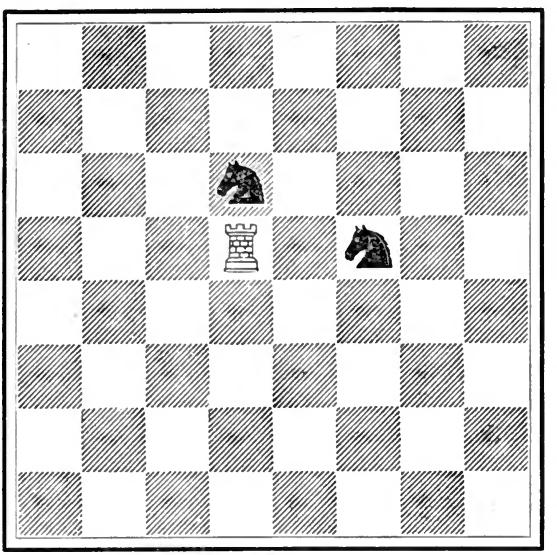
NOTE. — White wins by B to Q B 4 (ck), for the adverse King is unable to support the black Knight in a single move.

EVOLUTION No. 44.

FIGURE 148.

Rook *vs.* Two Knights.

Black.



White.

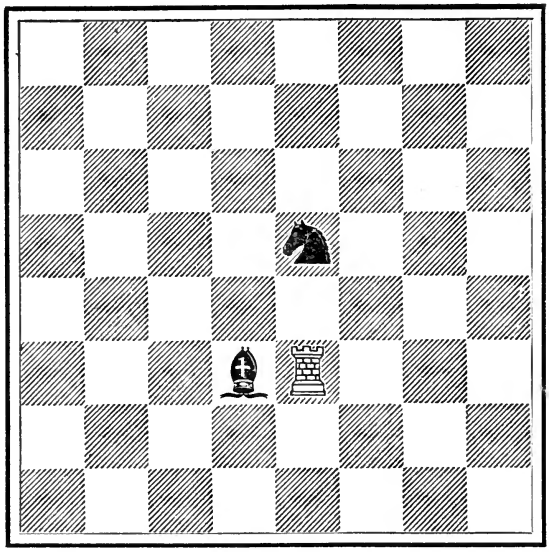
Whenever two Knights are simultaneously attacked by an adverse piece, then if one of the Knights has to move, the adverse piece wins one of the given Knights.

EVOLUTION No. 45.

FIGURE 149.

Rook *vs.* Knight and Bishop.

Black.



White.

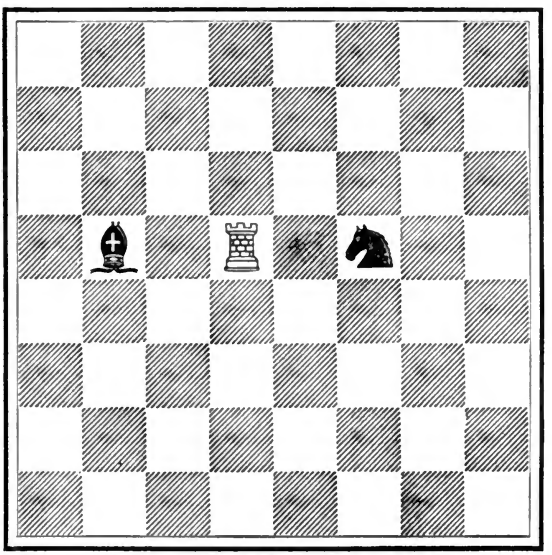
Whenever a Knight and a Bishop occupying squares opposite in color, or of like color but unable to support each other in one move, are simultaneously attacked, then, either with or without the move, the adverse piece wins the given Bishop or the given Knight.

EVOLUTION No. 46.

FIGURE 150.

Rook *vs.* Knight and Bishop.

Black.



White.

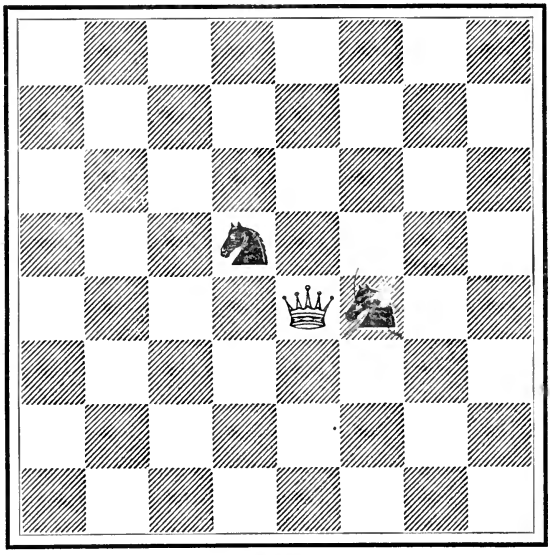
NOTE. — White wins either with or without the move.

EVOLUTION No. 47.

FIGURE 151.

Queen *vs.* Knight and Bishop.

Black.



White.

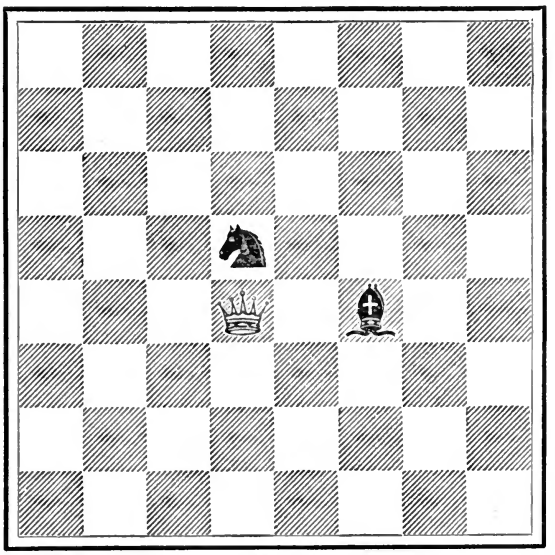
NOTE. — White wins either with or without the move.

EVOLUTION No. 48.

FIGURE 152.

Queen *vs.* Knight and Bishop.

Black.



White

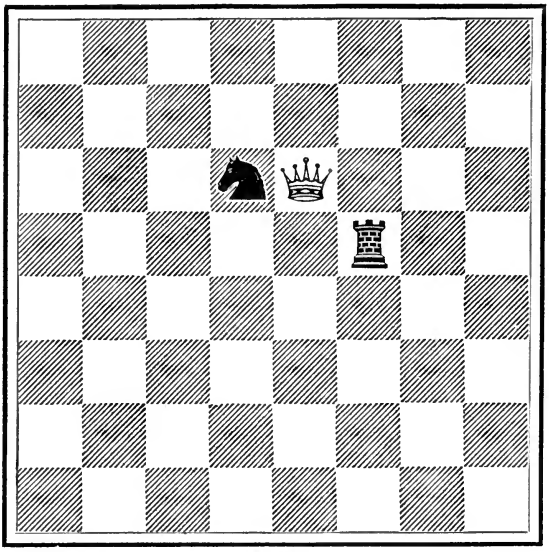
NOTE. — White wins either with or without the move.

EVOLUTION No. 49.

FIGURE 153.

Queen *vs.* Rook and Knight.

Black.



White.

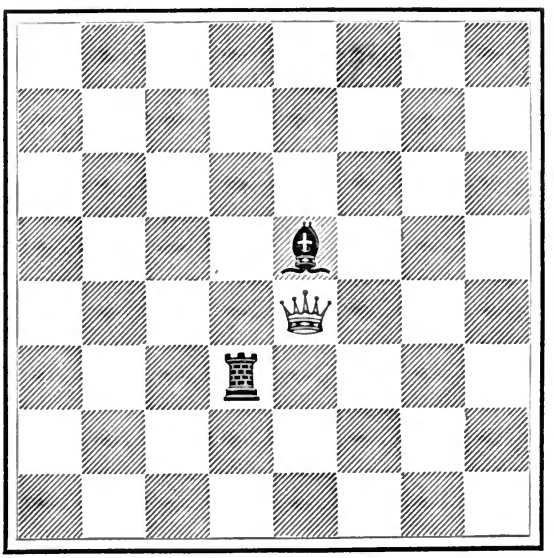
NOTE. — White wins either with or without the move.

EVOLUTION No. 50.

FIGURE 154.

Queen *vs.* Rook and Bishop.

Black.



White.

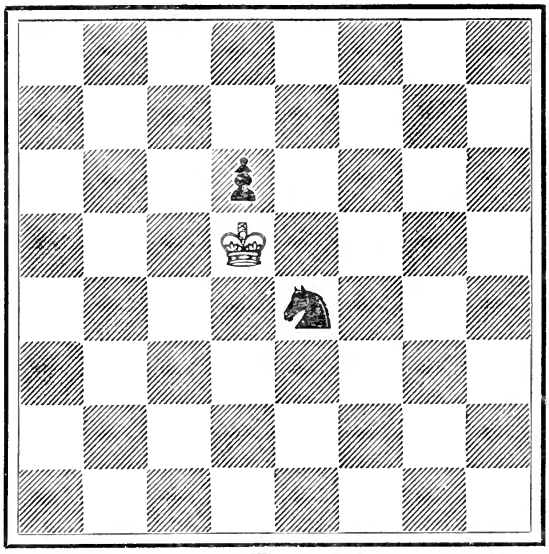
NOTE. — White wins either with or without the move.

EVOLUTION No. 51.

FIGURE 155.

King *vs.* Knight and Pawn.

Black.



White.

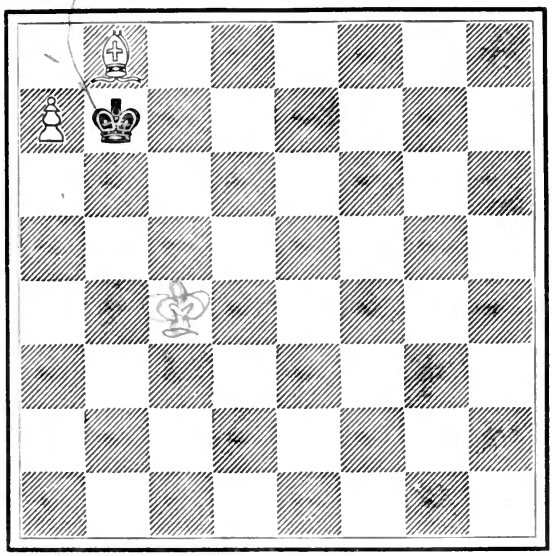
NOTE. — White wins either with or without the move.

EVOLUTION No. 52.

FIGURE 156.

King *vs.* Bishop and Pawn.

Black.



White.

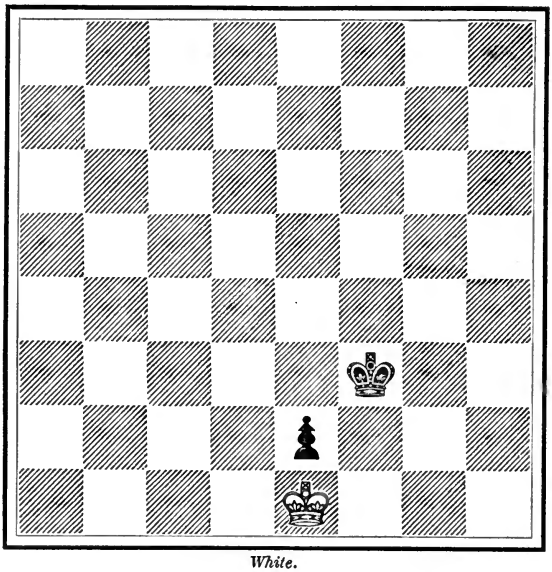
NOTE. — White wins either with or without the move.

EVOLUTION No. 53.

FIGURE 157.

King *vs.* King and Pawn.

Black.



White.

NOTE. — White loses if he has to move, and ~~wins the adverse pawn~~ if he has not to move.

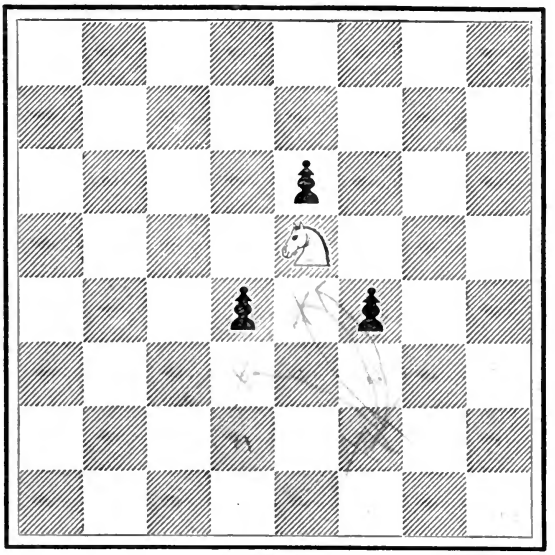
STALEMATE

EVOLUTION No. 54.

FIGURE 158.

Knight *vs.* Three Pawns.

Black.



White.

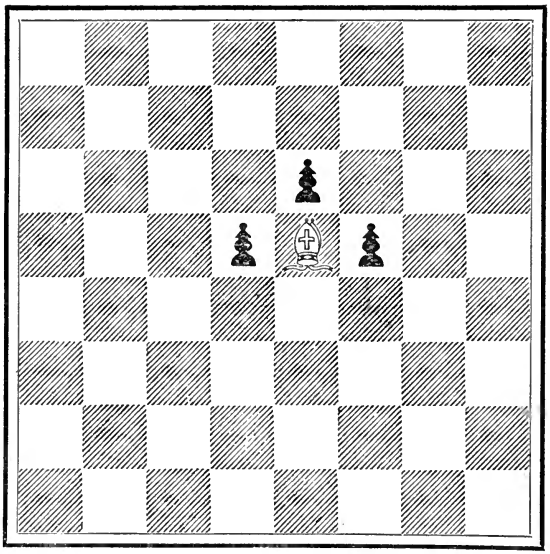
NOTE. — White, if he has not to move, will win all the adverse pawns.

EVOLUTION No. 55.

FIGURE 159.

Bishop *vs.* Three Pawns.

Black.



White.

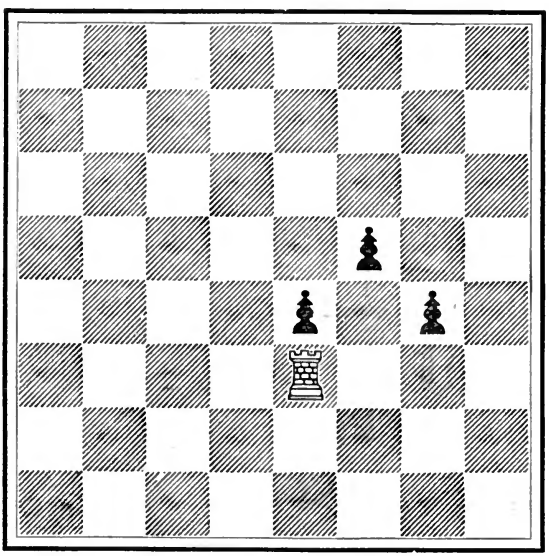
NOTE. — White, if he has not to move, wins all the adverse pawns.

EVOLUTION No. 56.

FIGURE 160.

Rook *vs.* Three Pawns.

Black.



White.

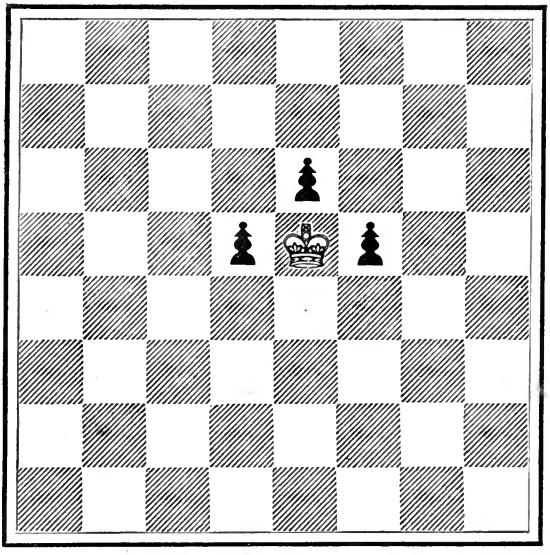
NOTE. — White, if he has not to move, will win all the adverse pawns, or if he have to move, move R – K Kt 3, and black must move, white winning. ! ! !

EVOLUTION No. 57.

FIGURE 161.

King *vs.* Three Pawns.

Black.



White.

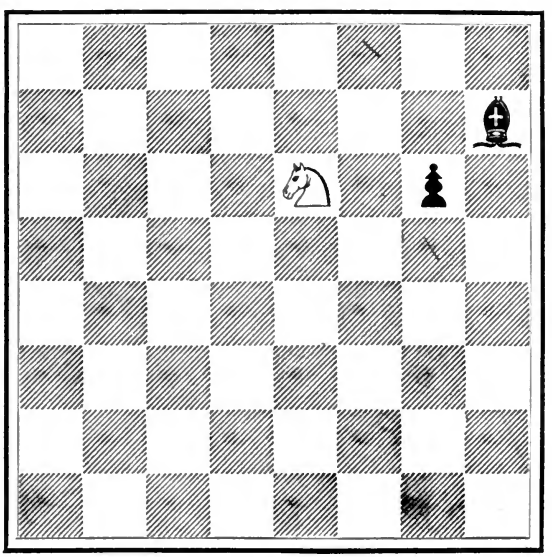
NOTE. — White, if he has not to move, will win all the adverse pawns.

EVOLUTION No. 58.

FIGURE 162.

Knight *vs.* Bishop and Pawn.

Black.



White.

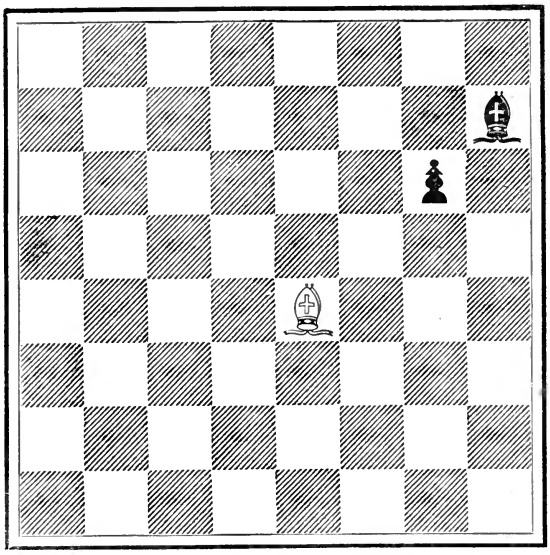
NOTE. — White, with the move, wins by Kt to K B 8, as both the black pieces are simultaneously attacked and will not mutually support each other after Black's next move.

EVOLUTION No. 59.

FIGURE 163.

Bishop *vs.* Bishop and Pawn.

Black.



White.

NOTE. — White wins either with or without the move.

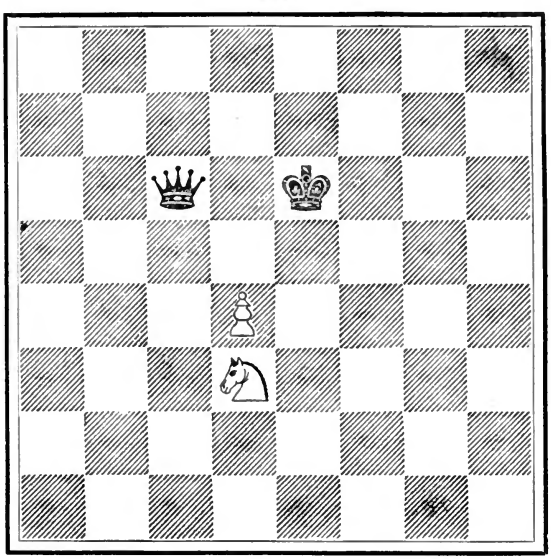
COMPLEX TACTICAL PLANES.

EVOLUTION No. 60.

FIGURE 164.

Knight and Pawn *vs.* King and Queen.

Black.



White.

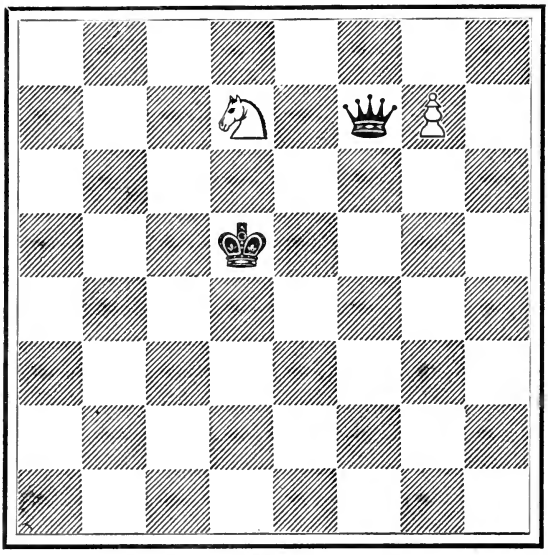
NOTE. — By the sacrifice of the pawn by P to Q 5 (ck) all the pieces become posted on the perimeter of the same Knight's octagon, and White, having the move, wins, in accordance with Prop. IV.

EVOLUTION No. 61.

FIGURE 165.

Knight and Pawn *vs.* King and Queen.

Black.



White.

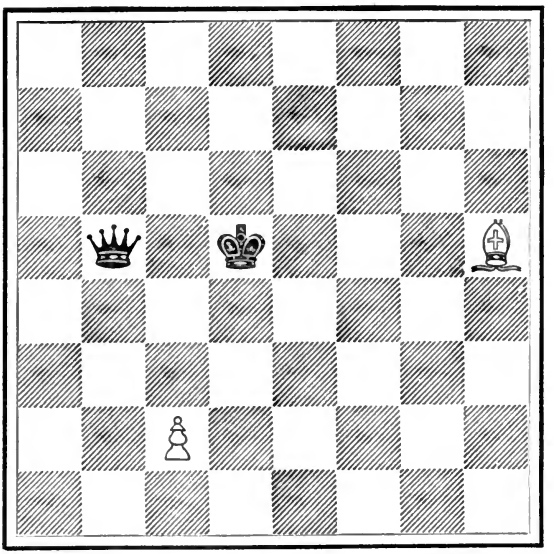
NOTE. — White, having the move, wins by P to Kt 8 (queening), followed by Kt to K B 6 (ck).

EVOLUTION No. 62.

FIGURE 166.

Bishop and Pawn *vs.* King and Queen

Black.



White.

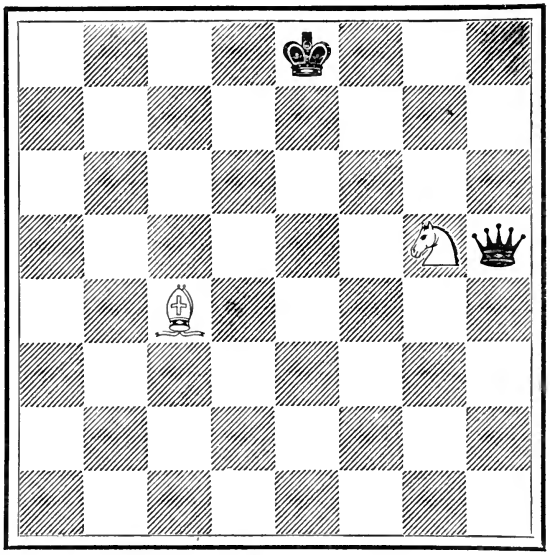
NOTE. — White, having the move, wins by sacrificing the pawn by P to Q B 4 (ck) and thus bringing all the pieces on the perimeter of the same Bishop's triangle.

EVOLUTION No 63.

FIGURE 167.

Knight and Bishop *vs.* King and Queen.

Black.



White.

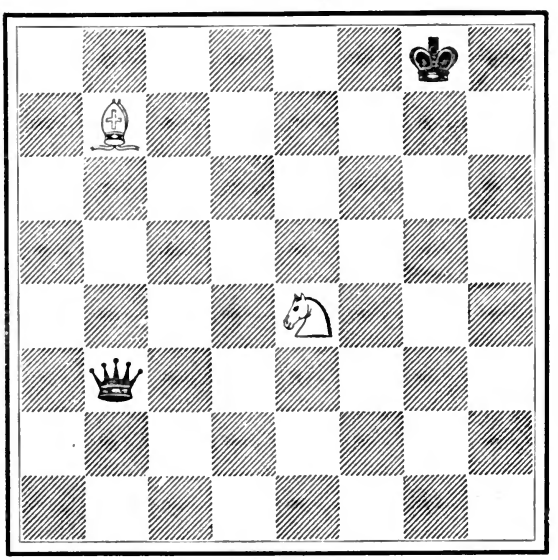
NOTE. — White, having the move, wins by B to K B 7 (ck).

EVOLUTION No. 64.

FIGURE 168.

Bishop and Knight *vs.* King and Queen.

Black.



White.

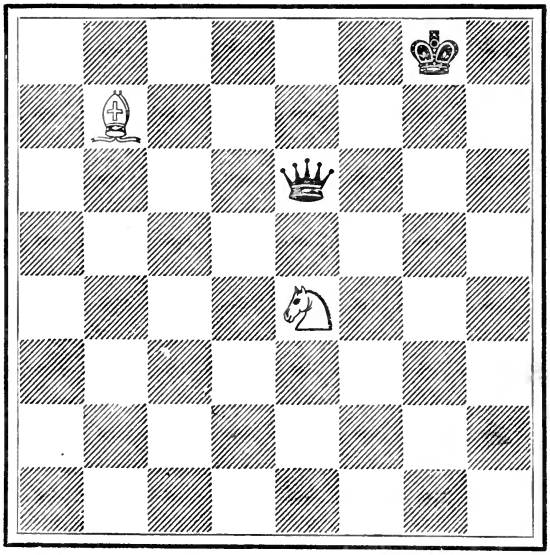
NOTE. —White, having the move, wins by B to Q 5 (ck), followed by Kt to K B 6 (ck).

EVOLUTION No. 65.

FIGURE 169.

Knight and Bishop *vs.* King and Queen.

Black.



White.

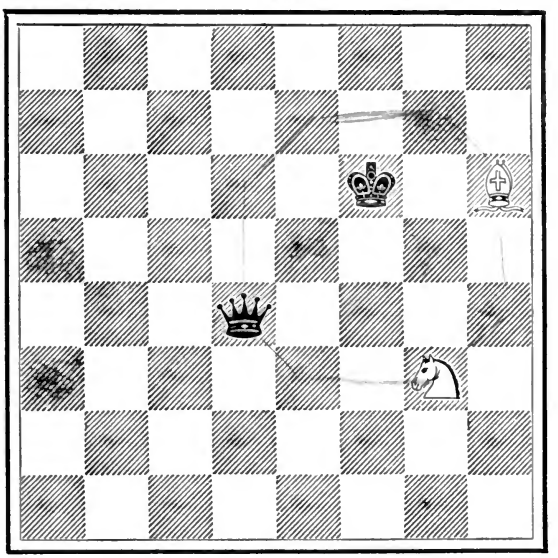
NOTE. — White, having the move, wins by B to Q 5, followed by Kt to K B 6 (ck).

EVOLUTION No. 66.

FIGURE 170.

Knight and Bishop *vs.* King and Queen.

Black.



White.

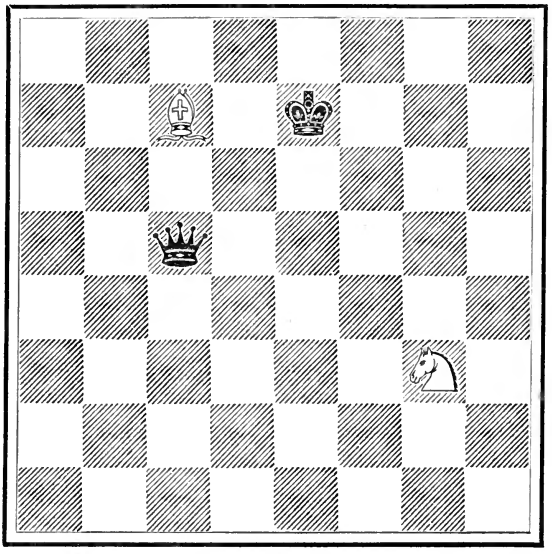
NOTE. — White, having the move, wins by B to K Kt 7 (ck), followed by Kt to K B 5 (ck).

EVOLUTION No. 67.

FIGURE 171.

Knight and Bishop *vs.* King and Queen.

Black.



White.

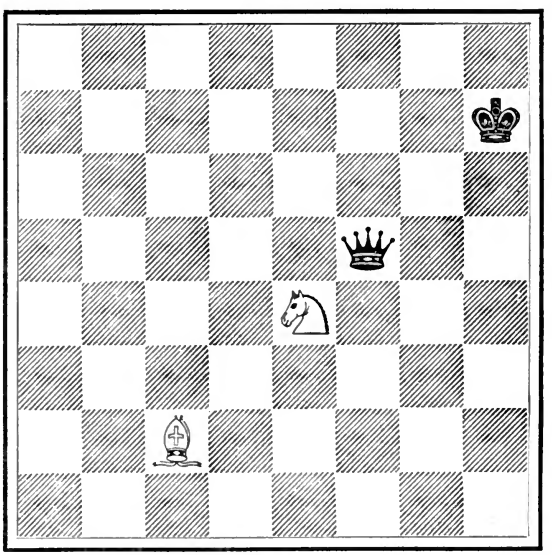
NOTE. — White, having to move, wins by B to Q 6 (ck), followed, if K × B, by Kt to K 4 (ck), and if Q × B, by Kt to K B 5 (ck).

EVOLUTION No. 68.

FIGURE 172.

Knight and Bishop *vs.* King and Queen.

Black.



White.

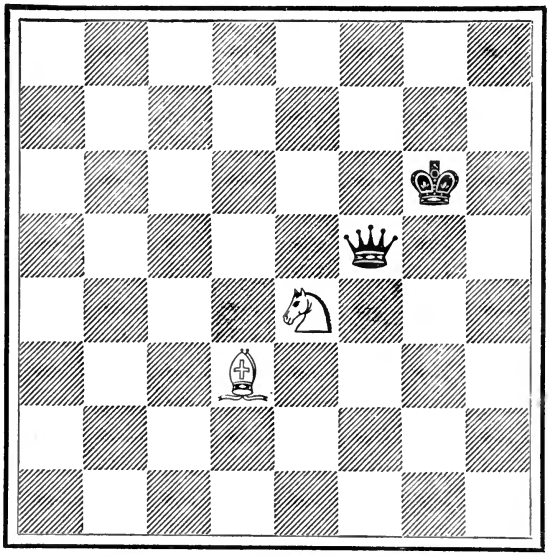
NOTE. — White, having to move, wins by Kt to K Kt 5 (ck).

EVOLUTION No. 69.

FIGURE 173.

Knight and Bishop *vs.* King and Queen.

Black.



White.

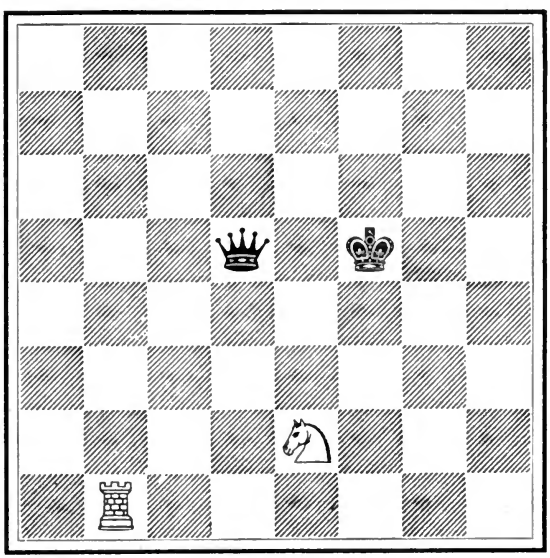
NOTE. — White, having to move, wins by either Kt to K B 2 or Kt to Q 5.

EVOLUTION No. 70.

FIGURE 174.

Knight and Rook *vs.* King and Queen.

Black.



White.

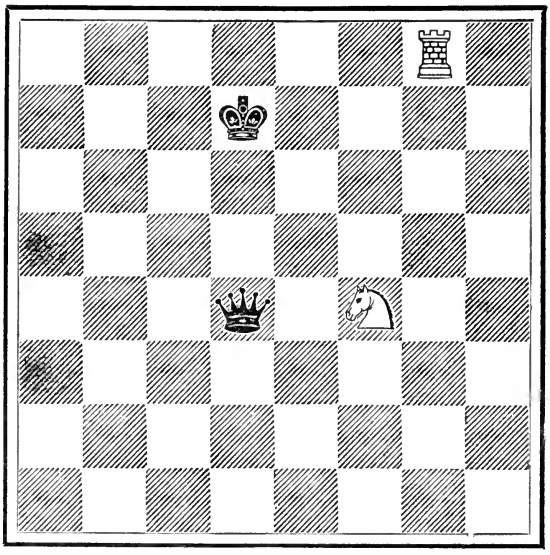
NOTE. — White, having to move, wins by R to Q Kt 5, followed by Kt to Q 4 (ck).

EVOLUTION No. 71.

FIGURE 175.

Rook and Knight *vs.* King and Queen.

Black.



White.

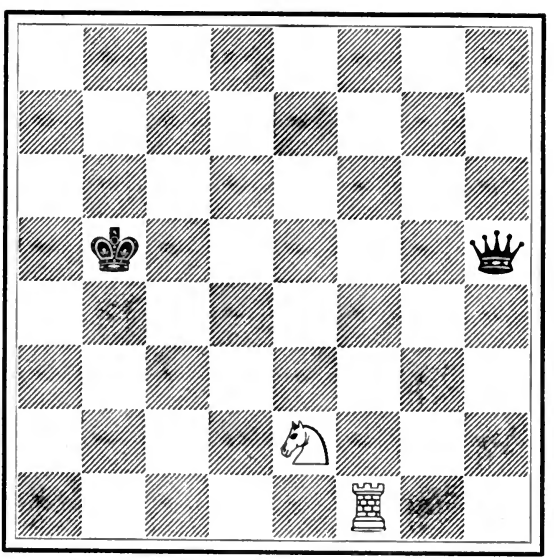
NOTE. — White, having to move, wins by R to Q 8 (ck), followed by Kt to K 6 (ck).

EVOLUTION No. 72.

FIGURE 176.

Rook and Knight *vs.* King and Queen.

Black.



White.

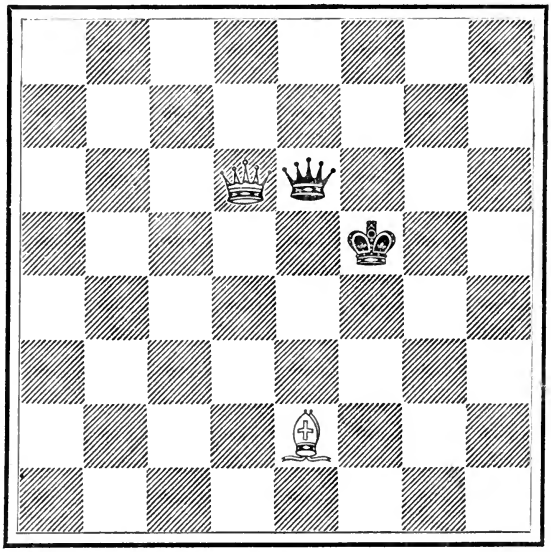
NOTE. — White, having to move, wins by R to K B 5 (ck), followed by Kt to Q 4 (ck).

EVOLUTION No. 73.

FIGURE 177.

Queen and Bishop *vs.* King and Queen.

Black.



White.

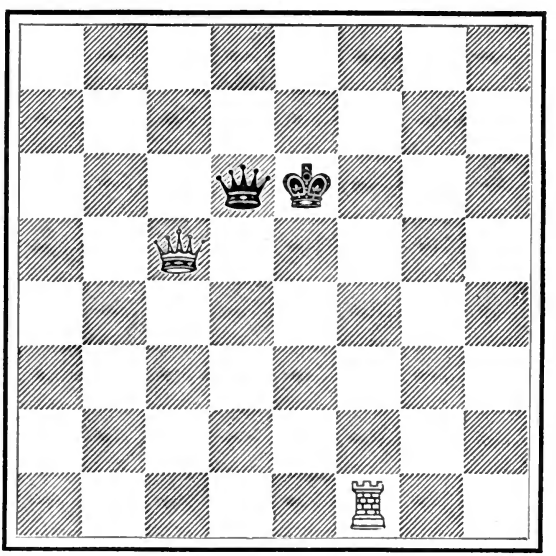
NOTE. — White, having to move, wins by B to K Kt 4 (ck).

EVOLUTION No. 74.

FIGURE 178.

Queen and Rook *vs.* King and Queen.

Black.



White.

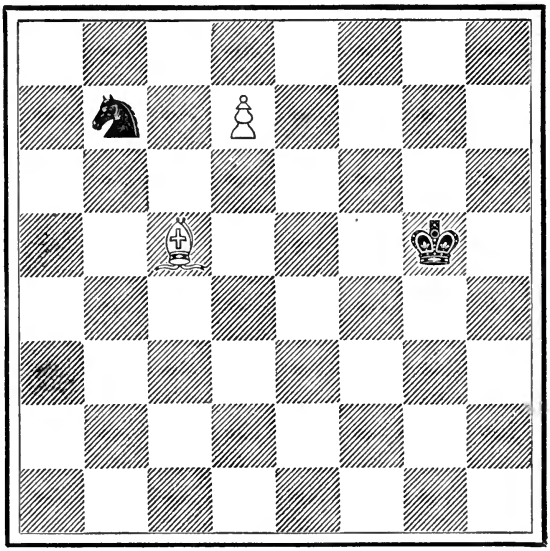
NOTE. — White, having to move, wins by R to K B 6 (ck).

EVOLUTION No. 75.

FIGURE 179.

Bishop and Pawn *vs.* King and Knight.

Black.



White.

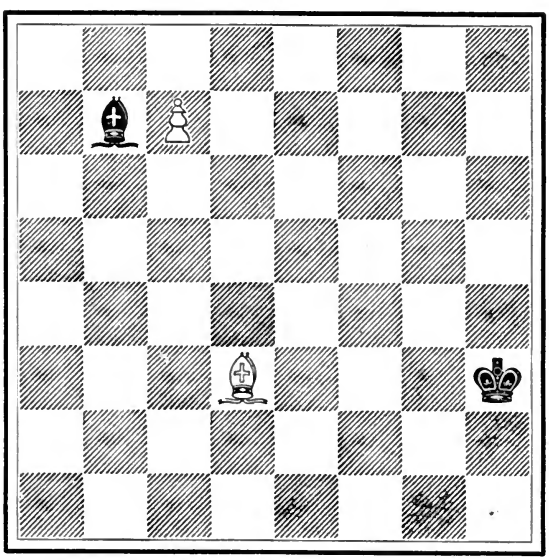
NOTE. — White, having to move, wins by P to Q 8 (queening), followed by B to K 7 (ck).

EVOLUTION No. 76.

FIGURE 180.

Bishop and Pawn *vs.* King and Bishop.

Black.



White.

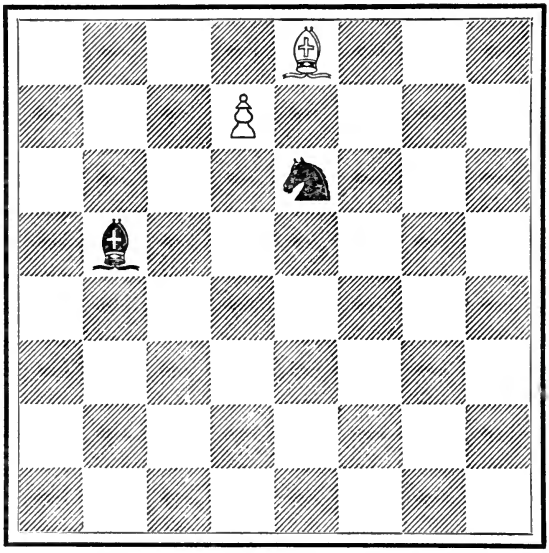
NOTE. — White, having to move, wins by B to K B 5 (ck), followed by P to Q B 8 (queening).

EVOLUTION No. 77.

FIGURE 181.

Bishop and Pawn *vs.* Bishop and Knight.

Black.



White.

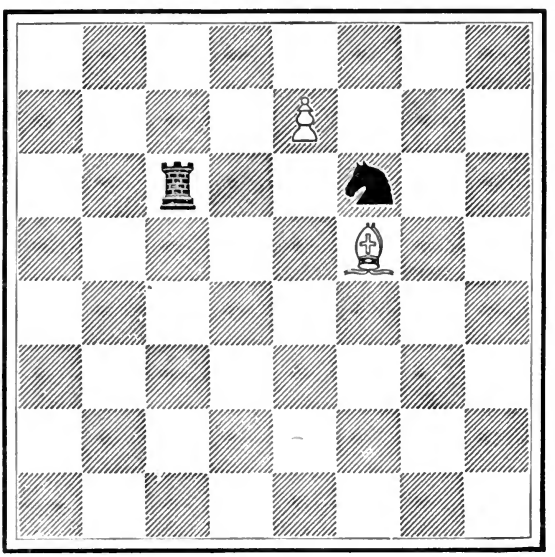
NOTE. — White, having to move, wins material by P to Q 8 (queening).

EVOLUTION No. 78.

FIGURE 182.

Bishop and Pawn *vs.* Rook and Knight.

Black.



White.

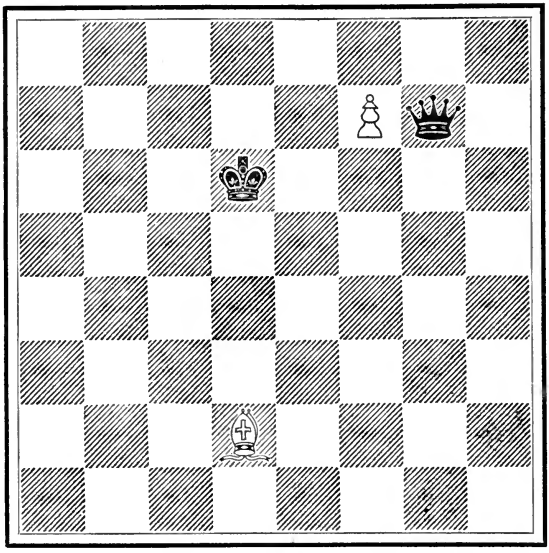
NOTE. — White, having to move, wins material by P to K 8 (queening), followed by B to Q 7.

EVOLUTION No. 79.

FIGURE 183.

Bishop and Pawn *vs.* King and Queen.

Black.



White.

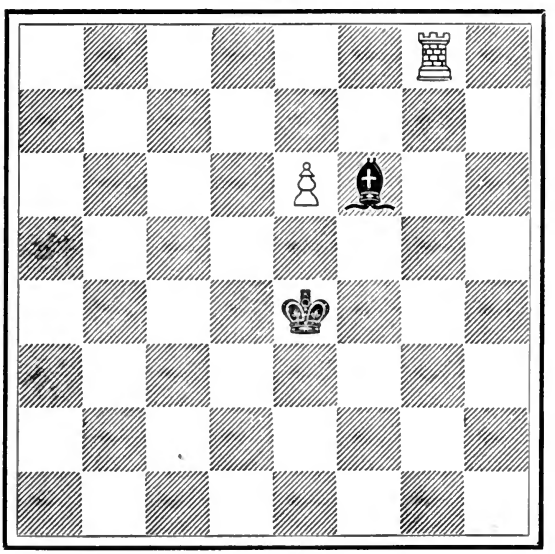
NOTE. — White, having to move, wins by P to K B 8 (queening), followed by B to Q Kt 4 (ck).

EVOLUTION No. 80.

FIGURE 184.

Rook and Pawn *vs.* King and Bishop.

Black.



White.

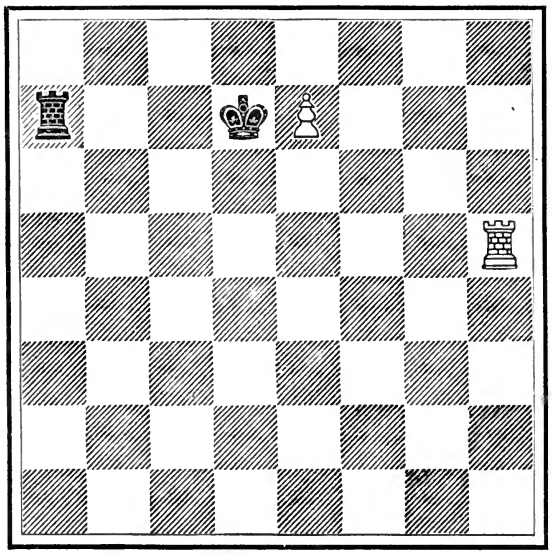
NOTE. — White, having to move, wins by P to K 7, followed, if B × P, by R to K 8. Otherwise, the pawn queens and wins.

EVOLUTION No. 81.

FIGURE 185.

Rook and Pawn *vs.* King and Rook.

Black.



White.

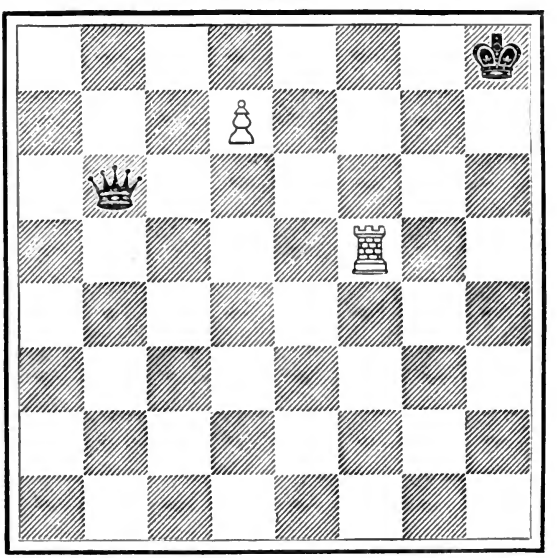
NOTE. — White, having to move, wins by P to K 8 (queening), and followed, if K × Q, by R to R 8 (ck) and R to R 7 (ck).

EVOLUTION No. 82.

FIGURE 186.

Rook and Pawn *vs.* King and Queen.

Black.



White.

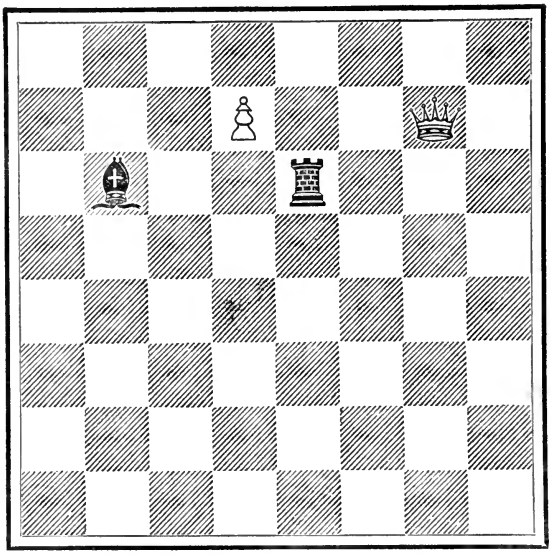
NOTE. — White, having to move, wins by **R** to **K B** 8 (ck), followed by P to Q 8 (queening).

EVOLUTION No. 83.

FIGURE 187.

Queen and Pawn *vs.* Rook and Bishop.

Black.



White.

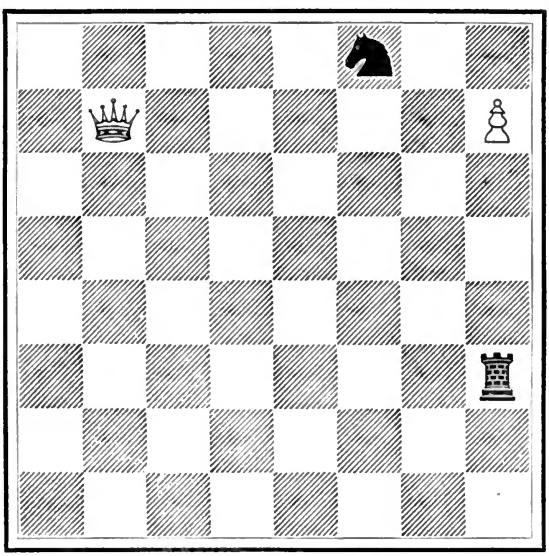
NOTE. — White, having to move, wins by P to Q 8 (queening), followed, if B × Q, by Q to Q 7.

EVOLUTION No. 84.

FIGURE 188.

Queen and Pawn *vs.* Rook and Knight.

Black.



White.

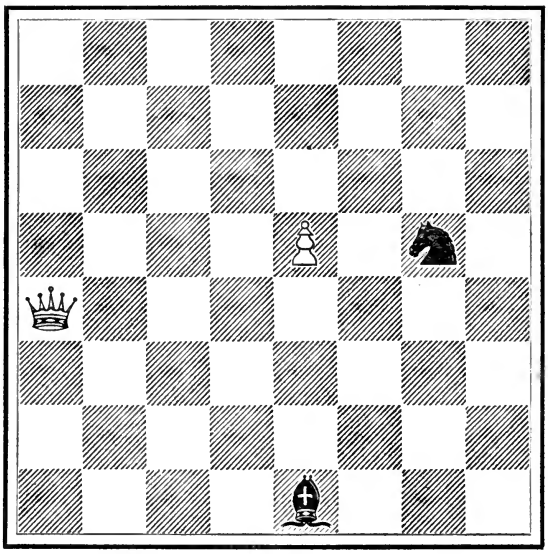
NOTE. — White, having to move, wins by P to R 8 (queening), followed, if R × Q, by Q to K Kt 7.

EVOLUTION No. 85.

FIGURE 189.

Queen and Pawn *vs.* Bishop and Knight.

Black.



White.

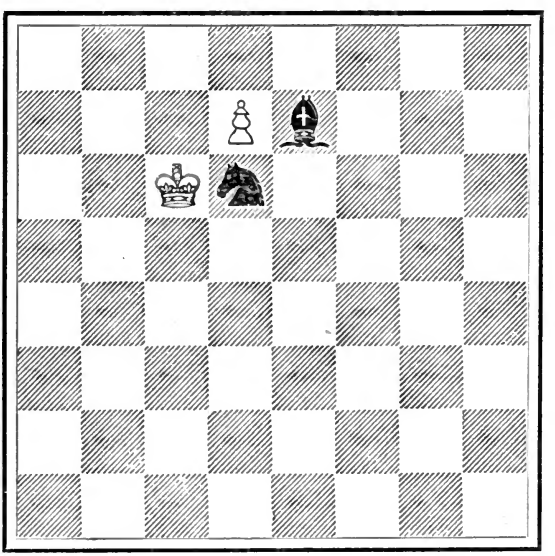
NOTE. — White, having to move, wins by P to K 6, followed, if Kt × P, by either Q to K 4 or Q to K 8.

EVOLUTION No. 86.

FIGURE 190.

King and Pawn *vs.* Bishop and Knight.

Black.



White.

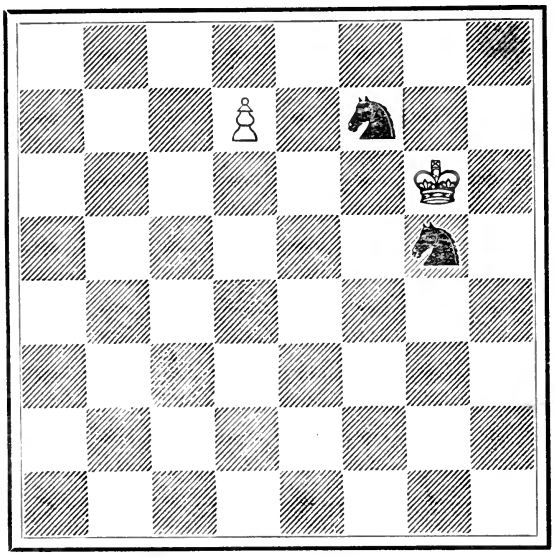
NOTE. — White, having to move, wins by P to Q 8 (queening), followed, if B × Q, by K × Kt.

EVOLUTION No. 87.

FIGURE 191.

King and Pawn *vs.* Two Knights.

Black.



White.

NOTE. — White, having to move, wins by P to Q 8 (queening).

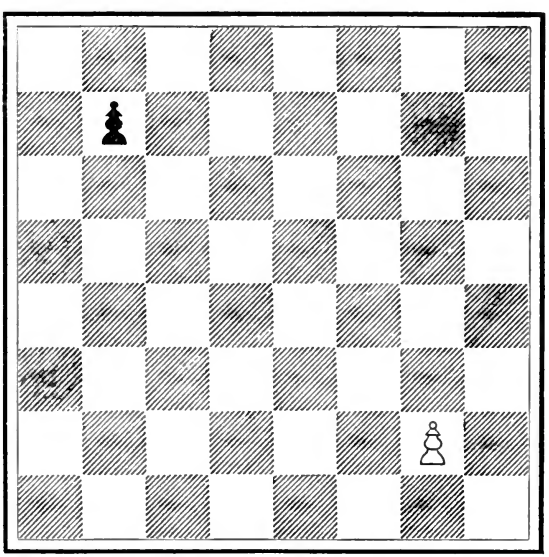
SIMPLE LOGISTIC PLANES.

EVOLUTION No. 88.

FIGURE 192.

Pawn *vs.* Pawn.

Black.



White.

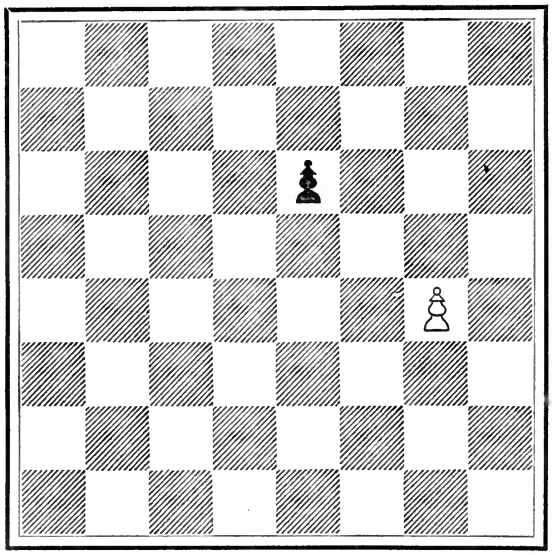
NOTE. — Either to move and queen without capture.

EVOLUTION No. 89.

FIGURE 193.

Pawn *vs.* Pawn.

Black.



White.

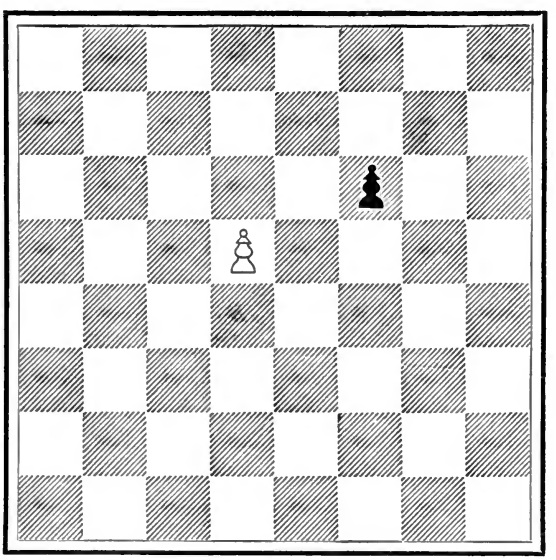
NOTE. — White, having to move, wins, first queening his pawn and then with the newly made queen capturing the adverse pawn. If white has not the move, the black pawn queens without capture.

EVOLUTION No. 90.

FIGURE 194.

Pawn *vs.* Pawn.

Black.



White.

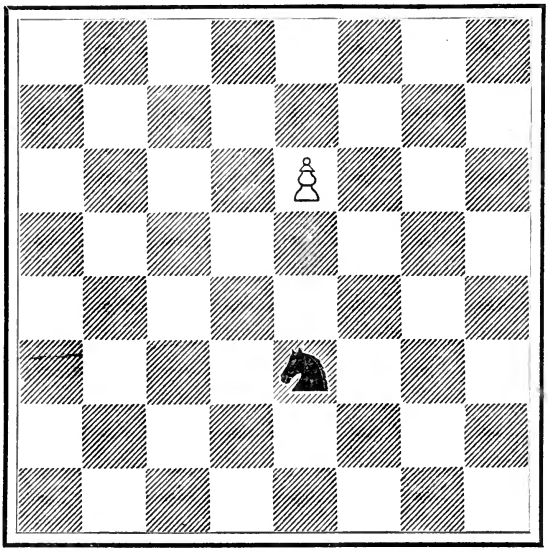
NOTE. — White, either with or without the move, queens and captures the adverse pawn.

EVOLUTION No. 91.

Figure 195.

Pawn *vs.* Knight.

Black.



White.

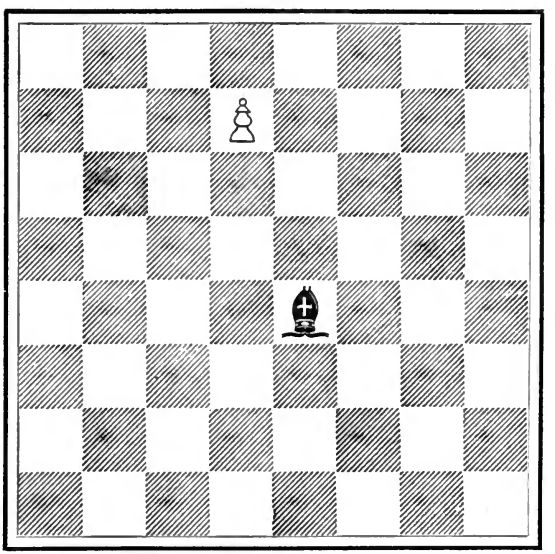
Note. — White, having to move, queens without capture.

EVOLUTION No. 92.

FIGURE 196.

Pawn *vs.* Bishop.

Black.



White.

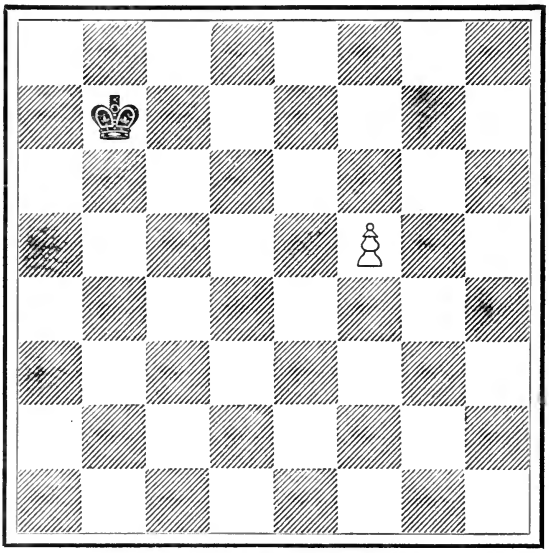
NOTE. — White, either with or without the move, queens without capture.

EVOLUTION No. 93.

FIGURE 197.

Pawn *vs.* King.

Black.



White.

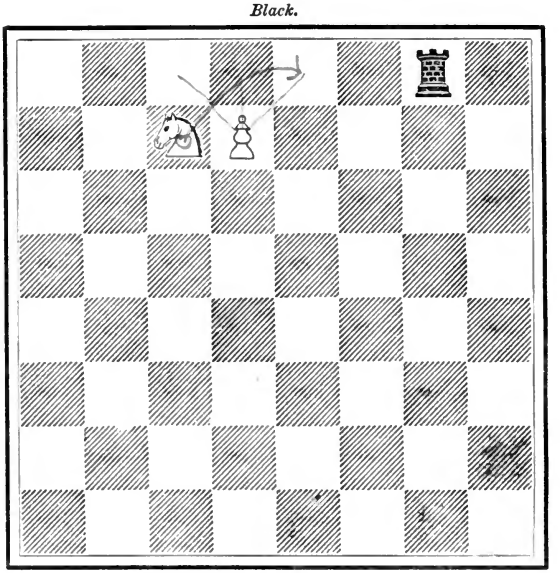
NOTE. — White, having to move, queens without capture.

EVOLUTION No. 94.

FIGURE 198.

Pawn and Knight *vs.* Queen or Rook.

Black.



White.

Whenever a Queen or Rook defending a hostile Point of Junction has not the move, then if an adverse piece can be in one move posted on the adjacent vertex of the pawn's triangle, the given pawn queens without capture.

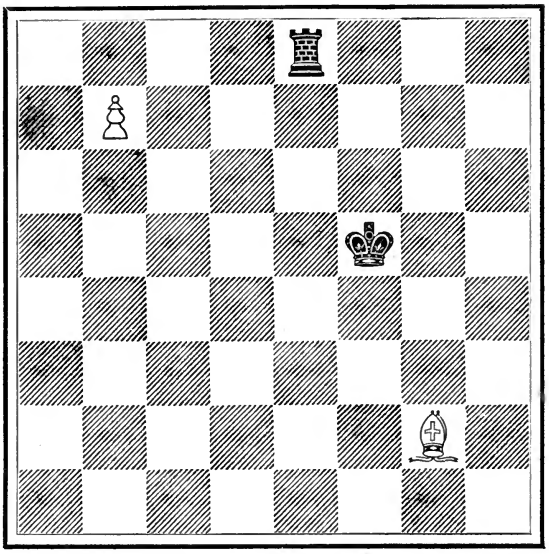
NOTE. — It is, of course, immaterial what the kindred piece may be, so long as it can occupy the point K 8; or what the position of the defending piece, if it does not attack the pawn at Q 7.

EVOLUTION No. 95.

FIGURE 199.

Bishop and Pawn *vs.* King and Rook.

Black.



White.

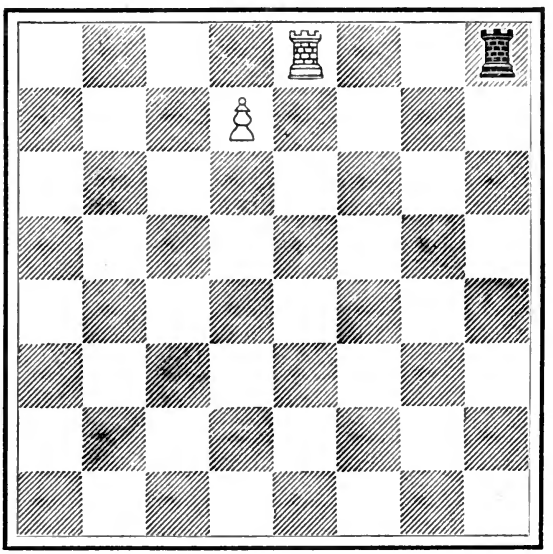
NOTE. — White, having to move, wins by B to K R 3 (ck), followed by B to Q B 8.

EVOLUTION No. 96.

FIGURE 200.

Rook and Pawn *vs.* Rook.

White.



White.

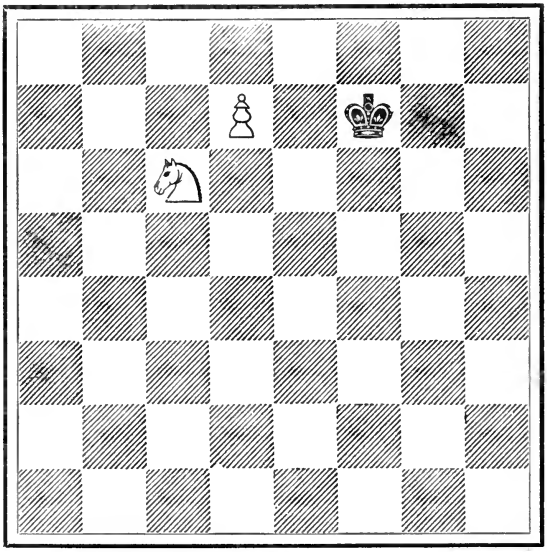
NOTE. — White wins, either with or without the move.

EVOLUTION No. 97.

FIGURE 201.

Knight and Pawn *vs.* King.

Black.



White.

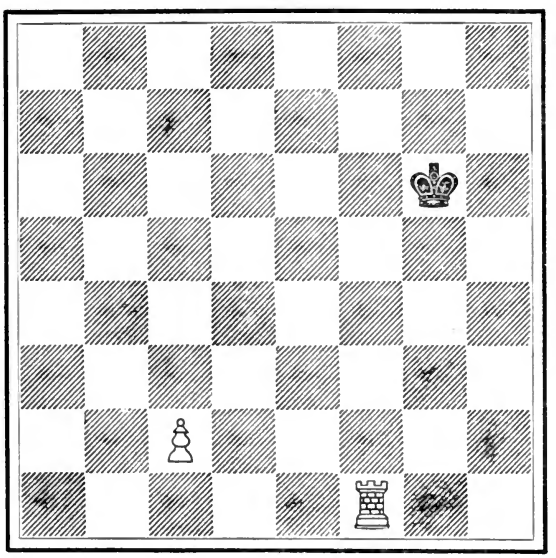
NOTE. — White, either with or without, wins, as the black King cannot gain command of the Point of Junction.

EVOLUTION No. 98.

FIGURE 202.

Rook and Pawn *vs.* King.

Black.



White.

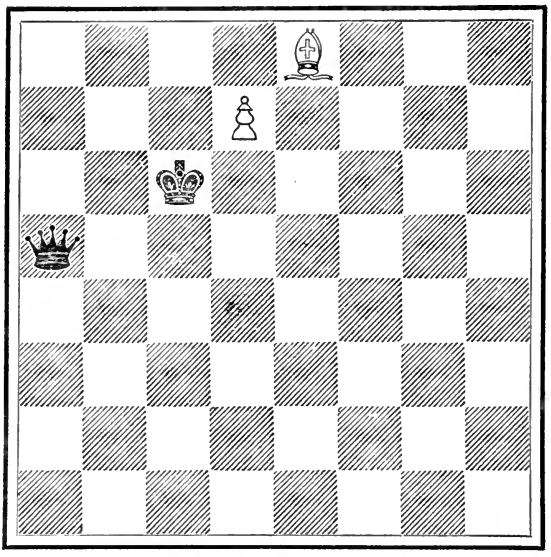
NOTE. — White wins, either with or without the move, as the adverse King cannot attack any point on the kindred pawn's altitude.

EVOLUTION No. 99.

FIGURE 203.

Bishop and Pawn *vs.* King and Queen.

Black.



White.

NOTE. — White, having the move, wins by P to Q 8, queening and disclosing check from the kindred Bishop.

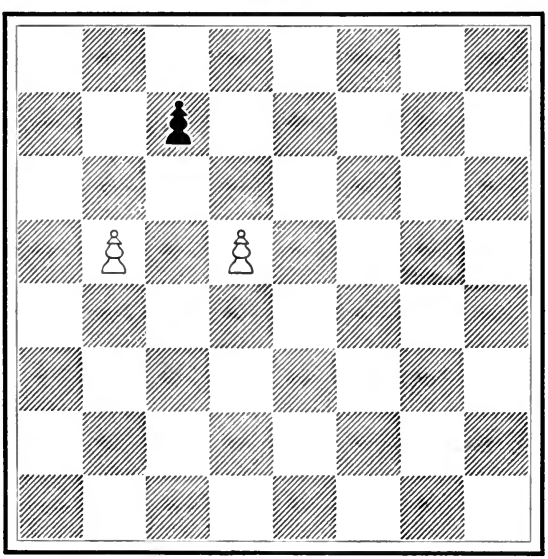
COMPOUND LOGISTIC PLANES.

EVOLUTION No. 100.

FIGURE 204.

Two Pawns *vs.* Pawn.

Black.



White.

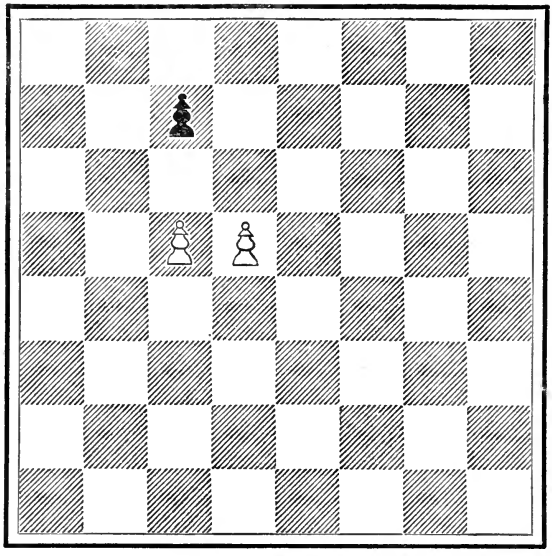
NOTE. — White wins, either with or without the move, by eliminating the adverse Point of Resistance by P to Q 6, or by P to Q Kt 6; clearing the vertical of one or the other of the kindred pawns.

EVOLUTION No. 101.

FIGURE 205.

Two Pawns *vs.* Pawn.

Black.



White.

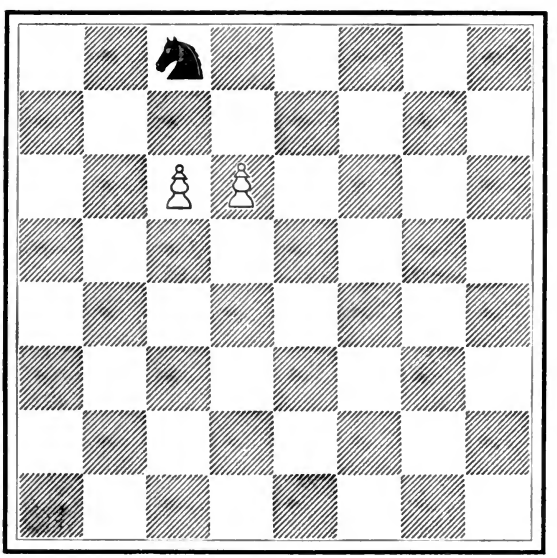
NOTE. — White wins, either with or without the move.

EVOLUTION No. 102.

FIGURE 206.

Two Pawns *vs.* Knight.

Black.



White.

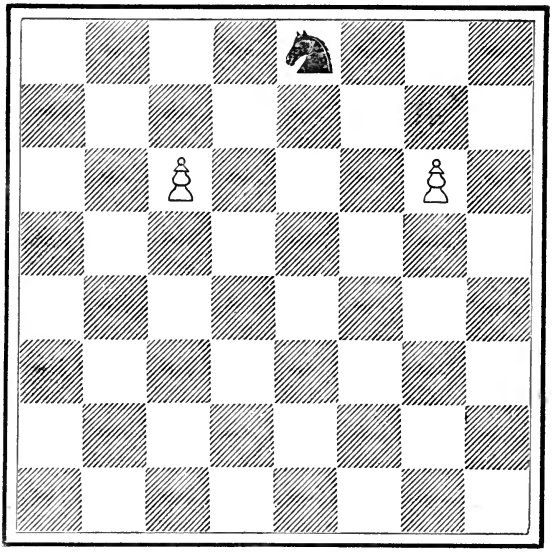
NOTE. — White, having the move, will queen one of the pawns without capture by the adverse Knight.

EVOLUTION No. 103.

FIGURE 207.

Two Pawns *vs.* Knight.

Black.



White.

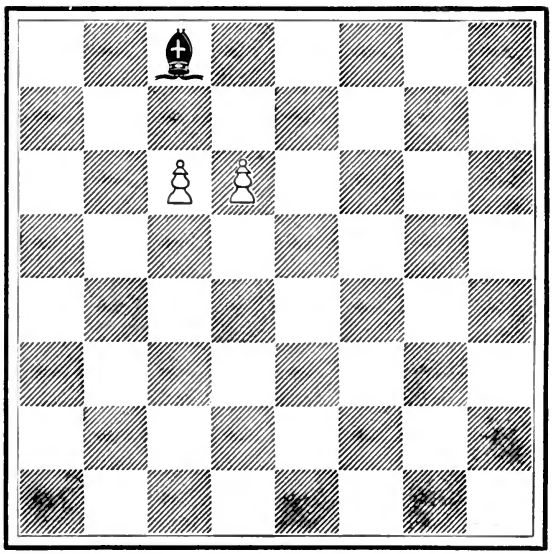
NOTE. — White, either with or without the move, will queen one of the pawns without capture by the adverse Knight.

EVOLUTION No. 104.

FIGURE 208.

Two Pawns *vs.* Bishop.

Black.



White.

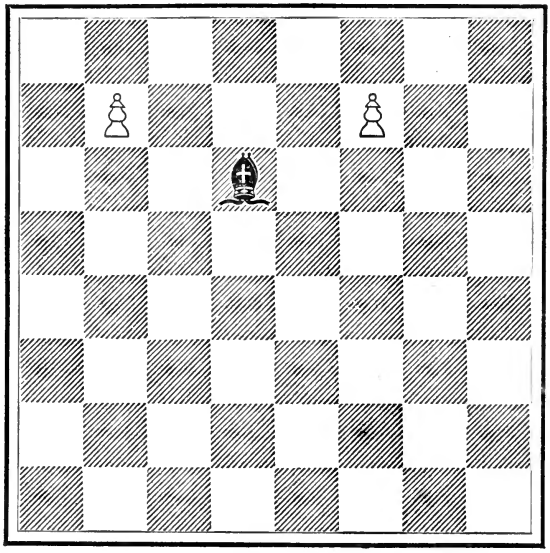
NOTE. — White, either with or without the move, will queen one of the pawns without capture by the adverse Bishop.

EVOLUTION No. 105.

FIGURE 209.

Two Pawns *vs.* Bishop.

Black.



White.

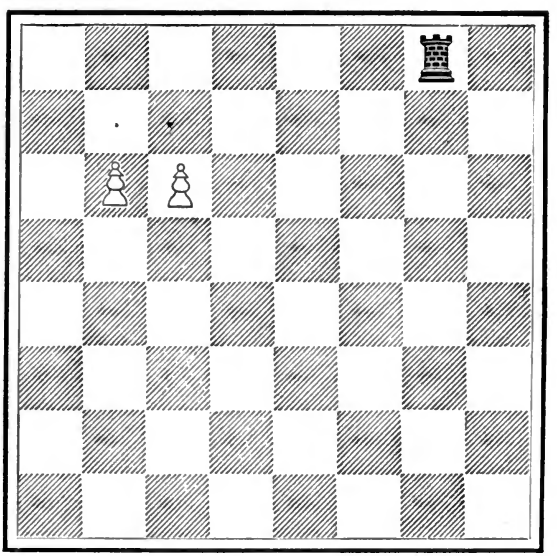
NOTE. — White, either with or without the move, will queen one of the pawns without capture by the adverse Bishop.

EVOLUTION No. 106.

FIGURE 210.

Two Pawns *vs.* Rook

Black.



White.

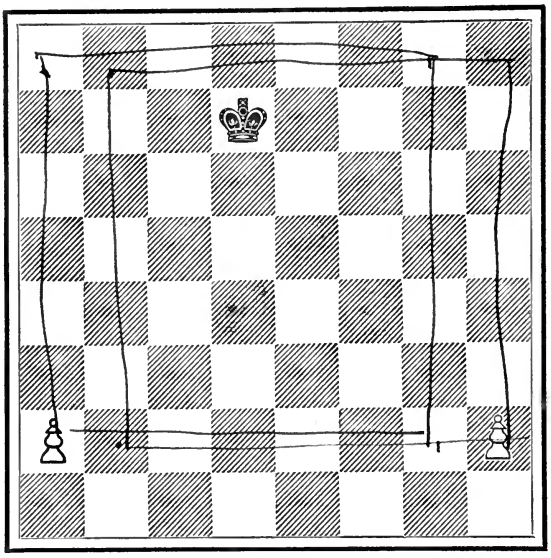
NOTE. — White, either with or without the move, will queen one of the pawns without capture by the adverse Rook.

EVOLUTION No. 107.

FIGURE 211.

Two Pawns *vs.* King.

Black.



White.

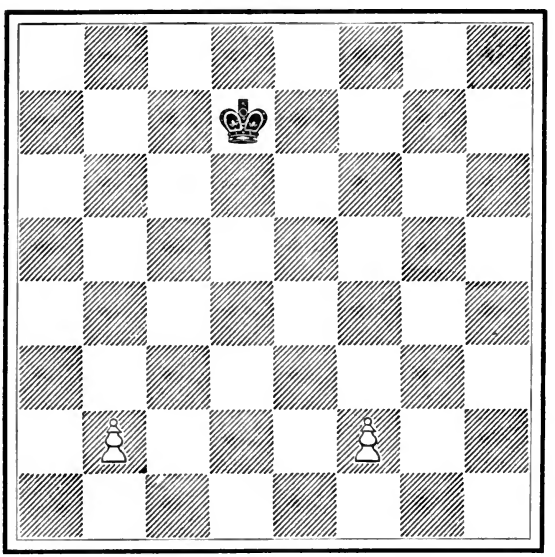
NOTE. — White, either with or without the move, will queen one of the pawns without capture by the adverse King.

EVOLUTION No. 108.

FIGURE 212.

Two Pawns *vs.* King.

Black.



White.

NOTE. — White, either with or without the move, will queen one of the pawns without capture by the adverse King.

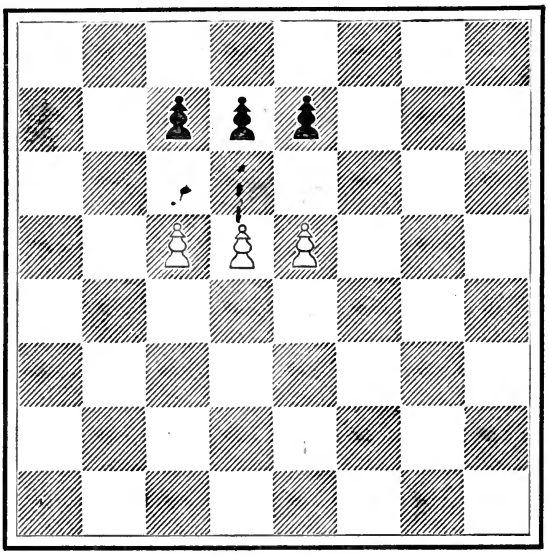
COMPLEX LOGISTIC PLANES.

EVOLUTION No. 109.

FIGURE 213.

Three Pawns *vs.* Three Pawns.

Black.



White.

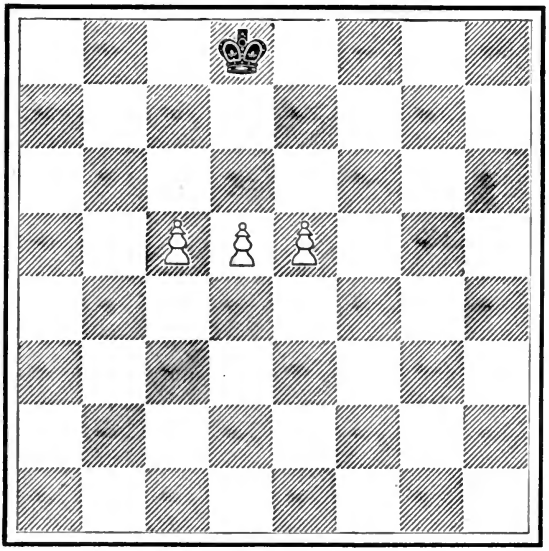
NOTE. — White, having to move, will queen a pawn without capture by P to Q 6, followed, if K P × P, by P to Q B 6; and if B P × P, by P to K 6.

EVOLUTION No. 110.

FIGURE 214.

Three Pawns *vs.* King.

Black.



White.

NOTE. — If White moves, Black wins all the pawns by moving the King in front of that pawn which advances; but if Black has to move, one of the pawns will queen without capture against the adverse King.

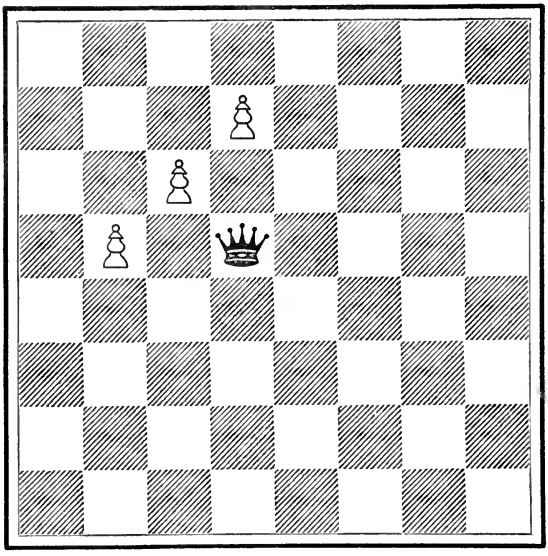
The key of the position is the posting of the King in front of the middle pawn, with one point intervening, when all are in a line and when it is the turn of the pawns to move. Then the King must play to the point directly in front of the pawn that moves.

EVOLUTION No. 111.

FIGURE 215.

Three Pawns *vs.* Queen.

Black.



White.

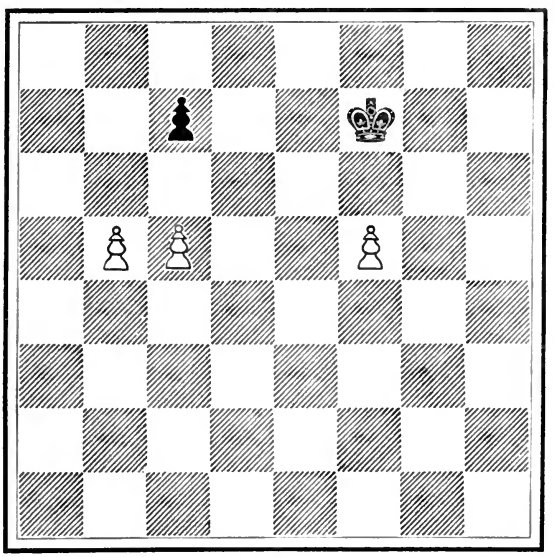
NOTE — Black wins, either with or without the move. The key of this position is that the black Queen wins if she is posted on any square opposite in color to those occupied by the pawns, from whence she commands the adjacent Point of Junction.

EVOLUTION No. 112.

FIGURE 216.

Three Pawns *vs.* King and Pawn.

Black.



White.

NOTE. — White wins, either with or without the move.

Checkmates.

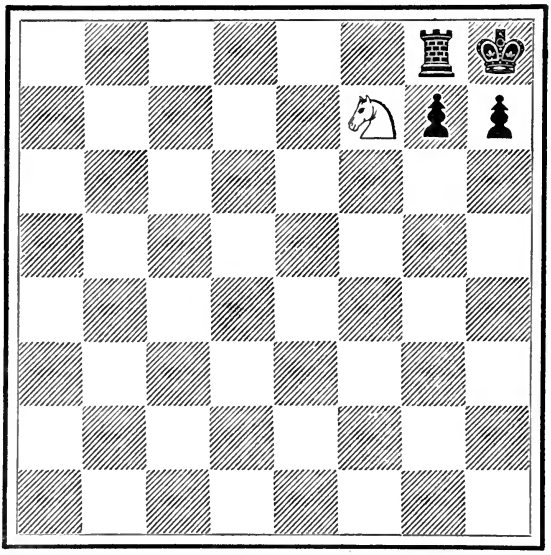
SIMPLE STRATEGIC PLANES.

EVOLUTION No. 113.

FIGURE 217.

Knight *vs.* Objective Plane of Single Radius.

Black.



White.

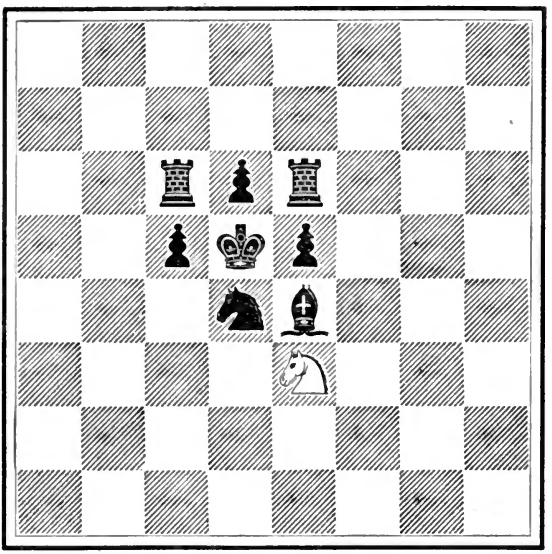
NOTE. — The Front Offensive always is an oblique, and the Point of Command of unlike color to the Point Material, and the radius a point on the perimeter of the adverse Knight's octagon.

EVOLUTION No. 114.

FIGURE 218.

Knight *vs.* Objective Plane of Two Radius.

Black.



White.

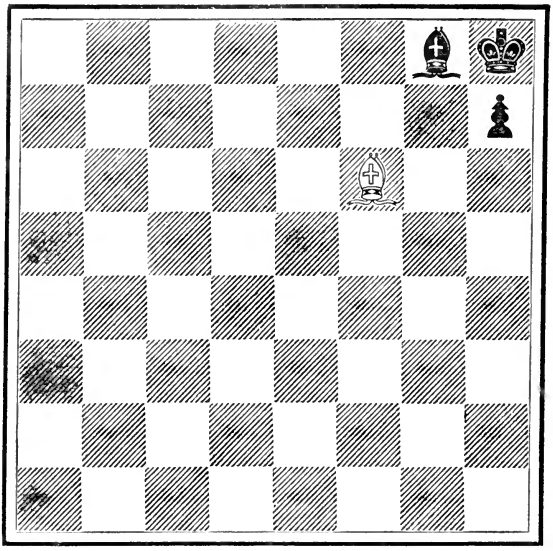
NOTE. — The Front Offensive always is an oblique; the Point of Command of unlike color to the Point Material, and the radius is a section of two points on the adverse Knight's octagon.

EVOLUTION No. 115.

FIGURE 219.

Bishop *vs.* Objective Plane of Two Radius.

Black.



White.

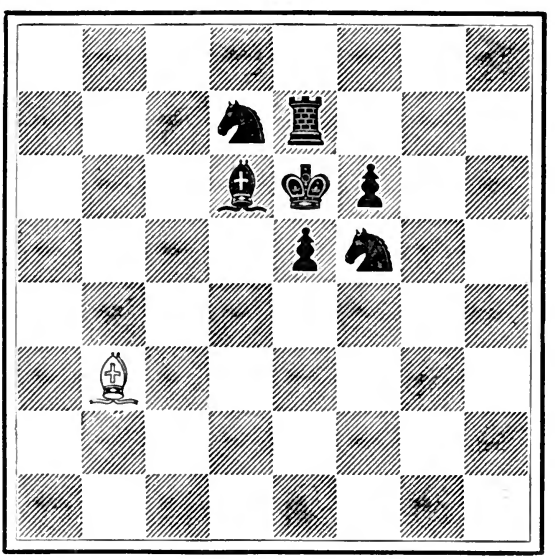
NOTE. — The Front Offensive always is a diagonal; the Point of Command and the radius are of like color to the Point Material, and the latter is situated on the same side of the Bishop's triangle as the Point of Command.

EVOLUTION No. 116.

FIGURE 220.

Bishop *vs.* Objective Plane of Three Radius.

Black.



White

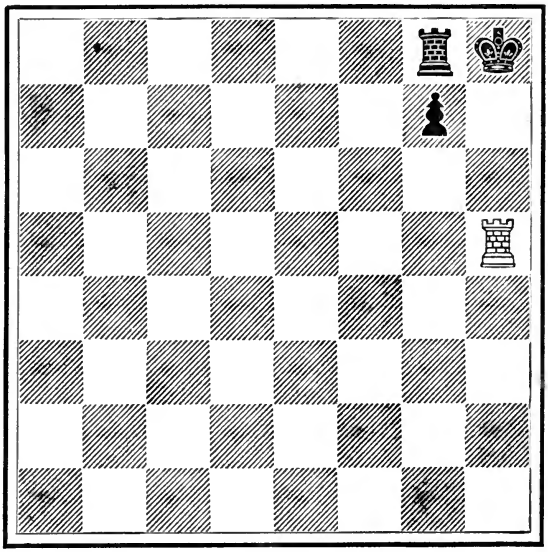
NOTE. — The Front Offensive always is a diagonal; the Point of Command and the radius are of like color to the Point Material, and the latter is situated on the same side of the Bishop's triangle as the Point of Command.

EVOLUTION No. 117.

FIGURE 221.

Rook *vs.* Objective Plane of Two Radius.

Black.



White.

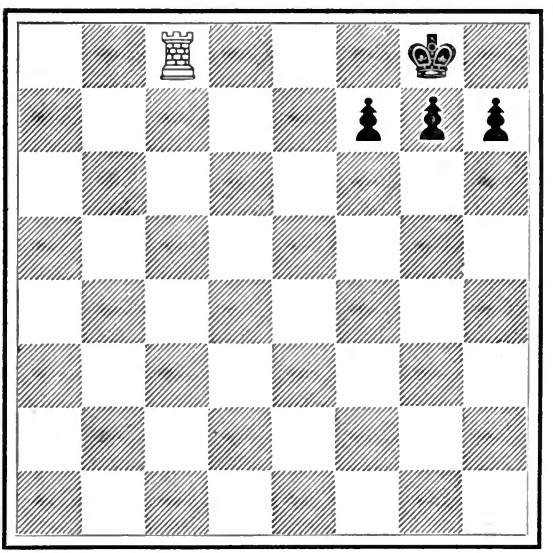
NOTE. — The Front Offensive is a vertical or horizontal; the radius is composed of one like and one unlike point, and situated on one side of the adverse Rook's quadrilateral. The Point of Command may be either a like or an unlike point.

EVOLUTION No. 118.

FIGURE 222.

Rook *vs.* Objective Plane of Three Radius.

Black.



White.

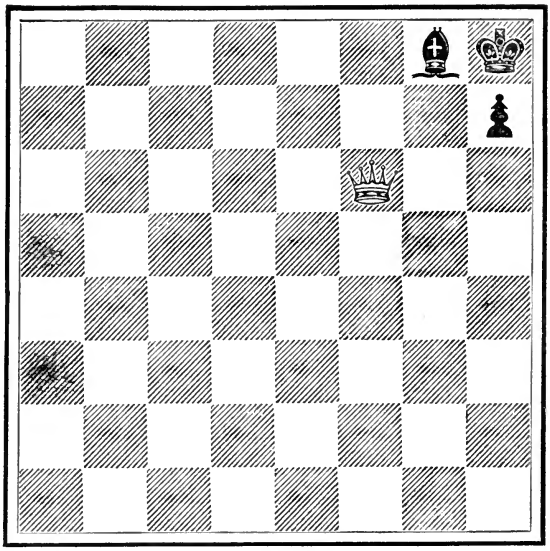
NOTE. — The Front Offensive is a vertical or horizontal; the radius is composed of one like and two unlike points and situated on one side of the adverse Rook's quadrilateral. The Point of Command may be either a like or an unlike point.

EVOLUTION No. 119.

FIGURE 223.

Queen *vs.* Objective Plane of Two Radius.

Black.



White.

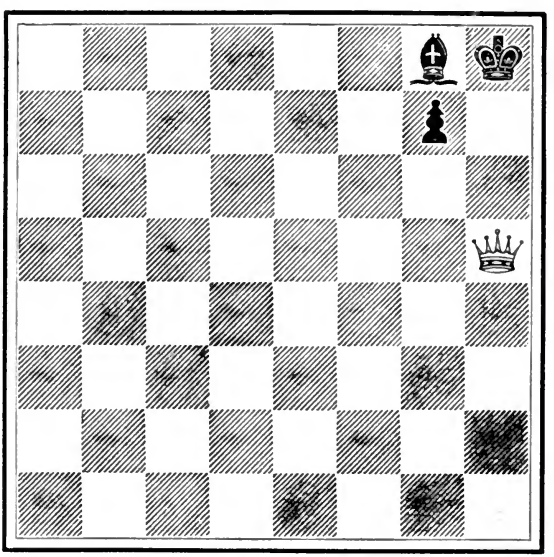
NOTE. — The Front Offensive is a diagonal; the radius is composed of two like points situated on the same side of the adverse Queen's polygon. The Point of Command and the Point Material are like points.

EVOLUTION No. 120.

FIGURE 224.

Queen *vs.* Objective Plane of Two Radius.

Black.



White.

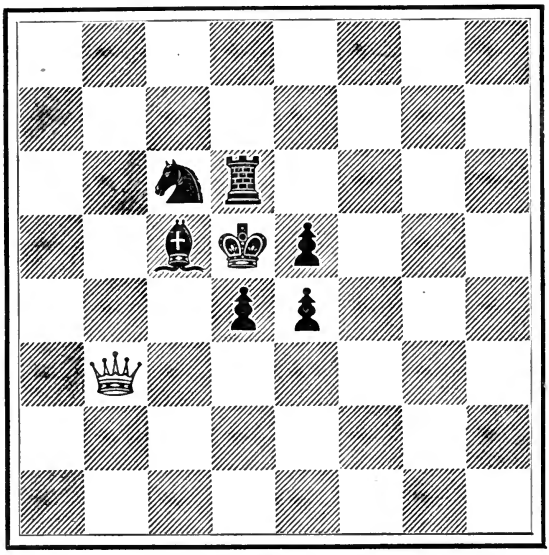
NOTE. —The Front Offensive is a vertical or a horizontal; the radius is composed of one like and one unlike point, contained in the same side of the adverse Queen's polygon. The Point of Command may be either a like or an unlike point.

EVOLUTION No. 121.

FIGURE 225.

Queen *vs.* Objective Plane of Three Radius.

Black.



White.

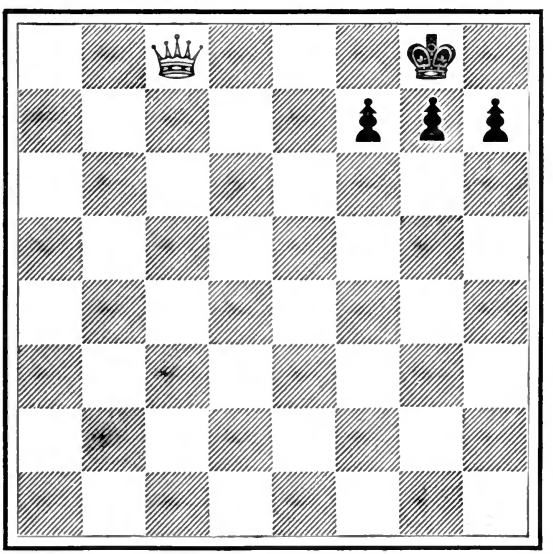
NOTE. — The Front Offensive is a diagonal; the radius is composed of like points, contained in the same side of the adverse Queen's polygon. The Point of Command and the Point Material are like points.

EVOLUTION No. 122.

FIGURE 226.

Queen *vs.* Objective Plane of Three Radius.

Black.



White.

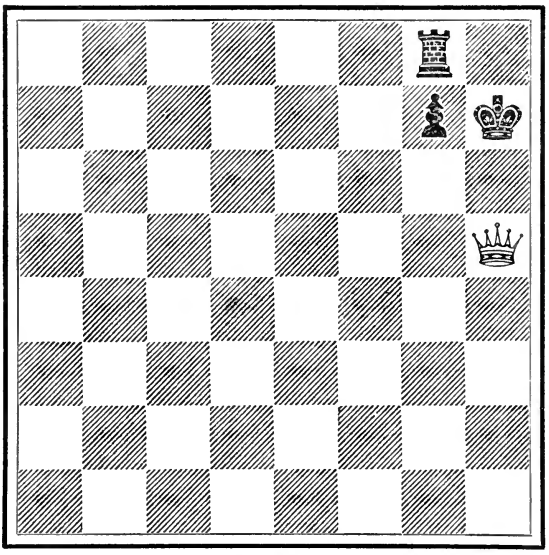
NOTE. — The Front Offensive is a vertical or horizontal; the radius is composed of one like and two unlike points, contained in the same side of the adverse Queen's polygon. The Point of Command may be either a like or an unlike point.

EVOLUTION No. 123.

FIGURE 227.

Queen *vs.* Objective Plane of Four Radius.

Black.



White.

NOTE. — The Front Offensive is a vertical or horizontal combined with a diagonal; the radius is composed of two like and two unlike points, and these are coincident with given sides of the Queen's polygon. The Point of Command and the Point Material are like points.

Checkmates.

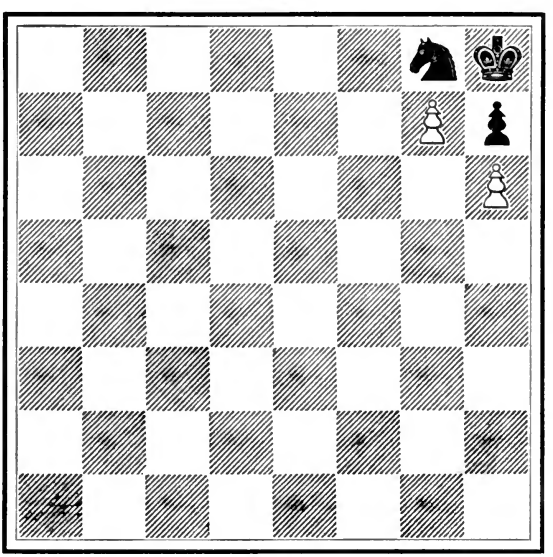
COMPOUND STRATEGIC PLANES.

EVOLUTION No. 124.

FIGURE 228.

Pawn and Supporting Factor *vs.* Objective Plane of Two Radius.

Black.



White.

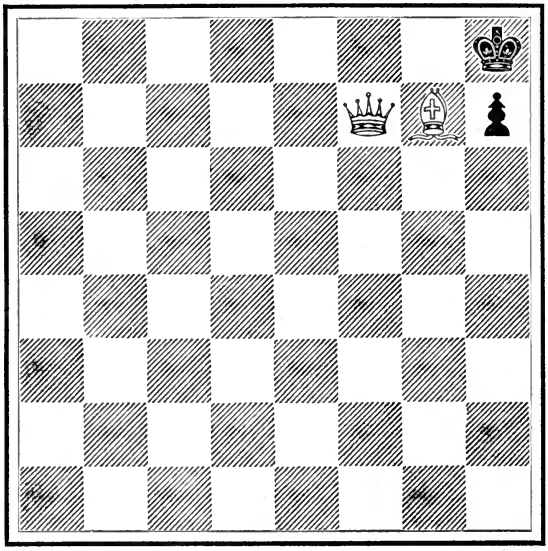
NOTE. — A single Pawn cannot command any Objective Plane. In this situation, the Front Offensive is a diagonal ; the radius is composed of two like points and contained on the same side of the adverse Pawn's triangle. The Point of Command and the Point Material are like Points.

EVOLUTION No. 125.

FIGURE 229.

Bishop and Supporting Factor *vs.* Objective Plane of Three Radius.

Black.



White.

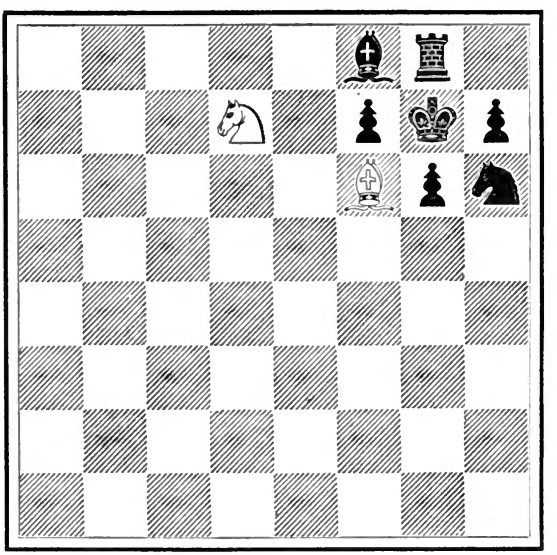
NOTE. — The Front Offensive is a diagonal; the radius is composed of two like points, contained in the same side of the adverse Bishop's triangle, and one unlike point contained in the perimeter of the supporting Factor. The Point of Command is a like point.

EVOLUTION No. 126.

FIGURE 230.

Bishop and Supporting Factor *vs.* Objective Plane of Three Radius.

Black.



White.

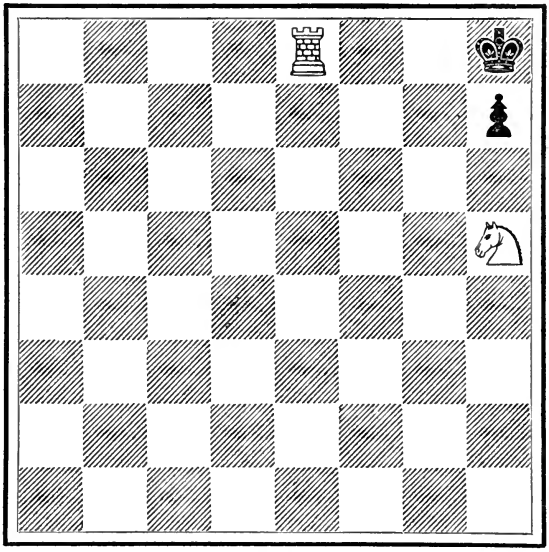
NOTE. — The Front Offensive is made up of a diagonal and an oblique; the radius is composed of three like points, all of which are contained in the adverse diagonal. The Point of Command is a like point.

EVOLUTION No. 127.

FIGURE 231.

Rook and Supporting Factor *vs.* Objective Plane of Three Radius.

Black.



White.

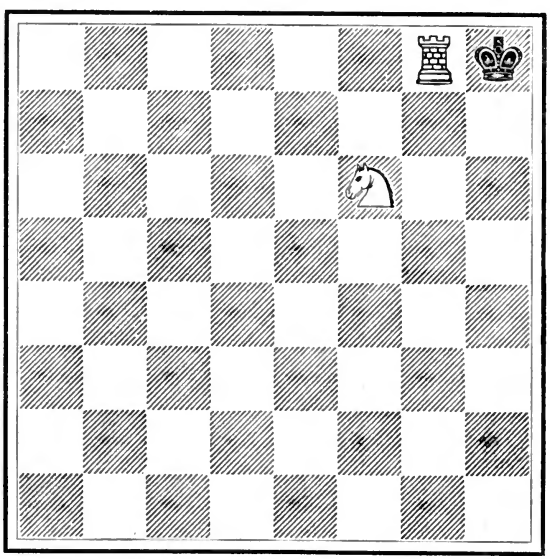
NOTE. — The Front Offensive is made up of a vertical or horizontal and an oblique; the radius is composed of two like and one unlike point, two of which are contained in one side of the adverse Rook's quadrilateral and the other in the perimeter of the adverse Knight's octagon. The Point of Command may be either a like or an unlike point, and situated upon either the horizontal or vertical.

EVOLUTION No. 128.

FIGURE 232.

Rook and Supporting Factor *vs.* Objective Plane of Four Radius.

Black.



White.

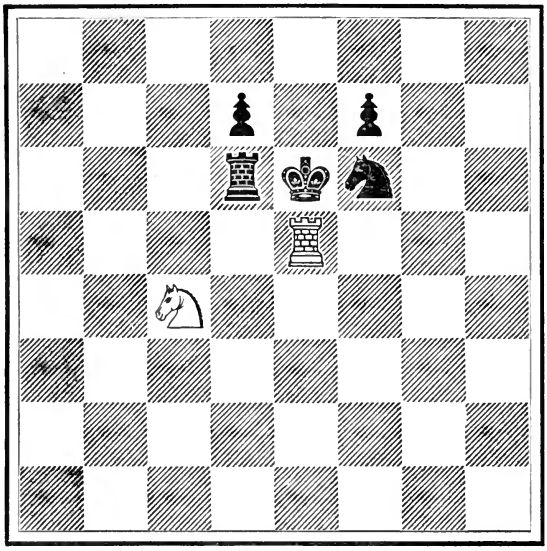
NOTE. — The Front Offensive consists of a vertical or horizontal and an oblique; the radius is composed of two like and two unlike points, two of which, both unlike, are situated on the perimeter of an adverse Knight's octagon, and one like and one unlike are situated on one side of the adverse Rook's quadrilateral. The Point of Command is an unlike point, and is that point in the Objective Plane at which the given octagon and quadrilateral intersect.

EVOLUTION No. 129.

FIGURE 233.

Rook and Supporting Factor *vs.* Objective Plane of Five Radius.

Black.



White.

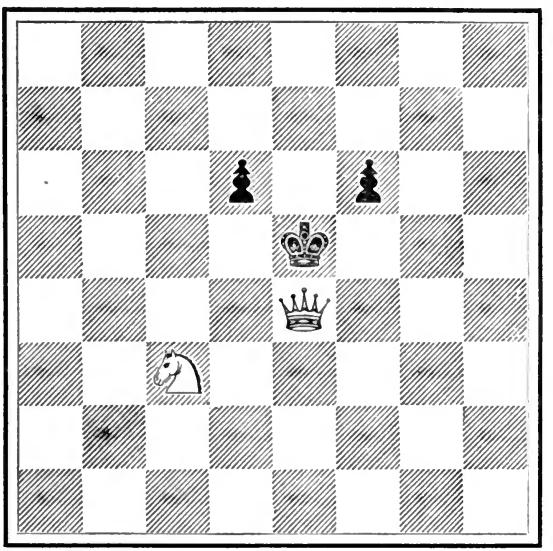
NOTE. — The Offensive Front consists of a vertical, a horizontal, and an oblique. The radius is composed of two like and of three unlike points, two like and one unlike points being contained in the horizontal, one like and two unlike points being contained in the horizontal, and one unlike point in the oblique. The Point of Command is an unlike point, and is that point at which the adverse quadrilateral and octagon intersect.

EVOLUTION No. 130.

FIGURE 234.

Queen and Supporting Factor *vs.* Objective Plane of Seven Radius.

Black.



White.

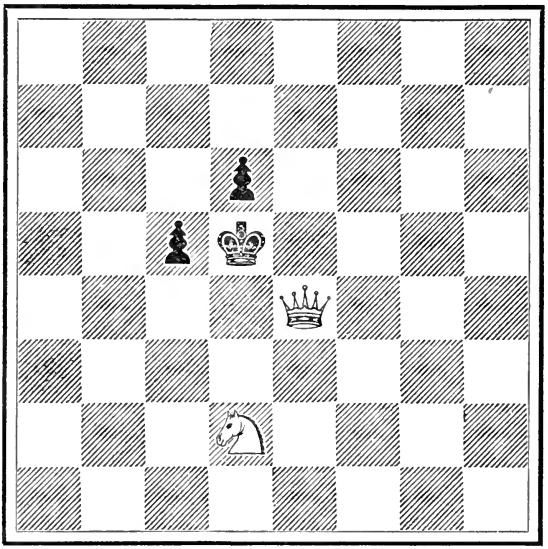
NOTE. — The Front Offensive consists of a horizontal, a vertical, two diagonals, and two obliques. The radius is composed of three like and four unlike points; three unlike points are contained in the diagonals, two unlike and one like points in the vertical, one unlike and two like points in the horizontal, and two unlike points in the obliques. The Point of Command is an unlike point, and is that point at which the adverse polygon and octagon intersect.

EVOLUTION No. 131.

FIGURE 235.

Queen and Supporting Factor *vs.* Objective Plane of Seven Radius

Black.



White.

NOTE. — The Front Offensive consists of a vertical, a horizontal, a diagonal, and an oblique. The radius is composed of five like points and two unlike points, one like and two unlike points, and contained in both the vertical and the horizontal, three like points in the diagonal, and one in the oblique. The Point of Command is a like point, and is that point at which the adverse polygon and octagon intersect.

Checkmates.

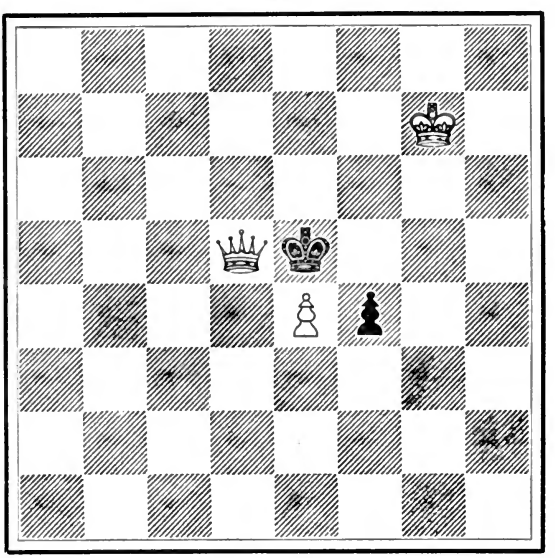
COMPLEX STRATEGIC PLANES.

EVOLUTION No. 132.

FIGURE 236.

A Pawn Lodgment in an Objective Plane of Eight Radius.

Black.



White.

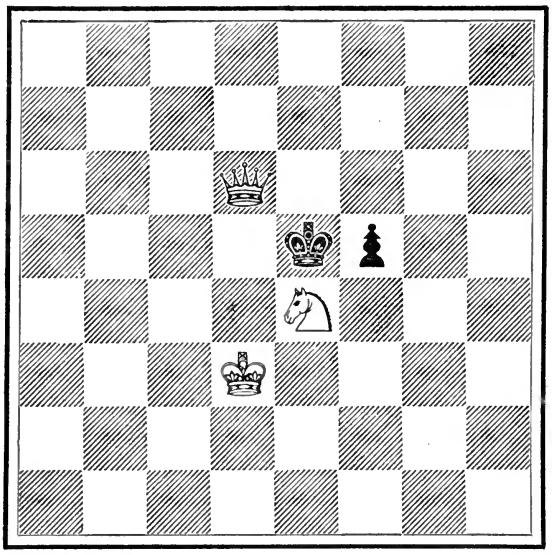
NOTE. — The Queen never occupies a Point of Lodgment, and consequently she can only enter the Objective Plane as a Prime Tactical Factor.

EVOLUTION No. 133.

FIGURE 237.

A Knight Lodgment in an Objective Plane of Eight Radius.

Black.



White.

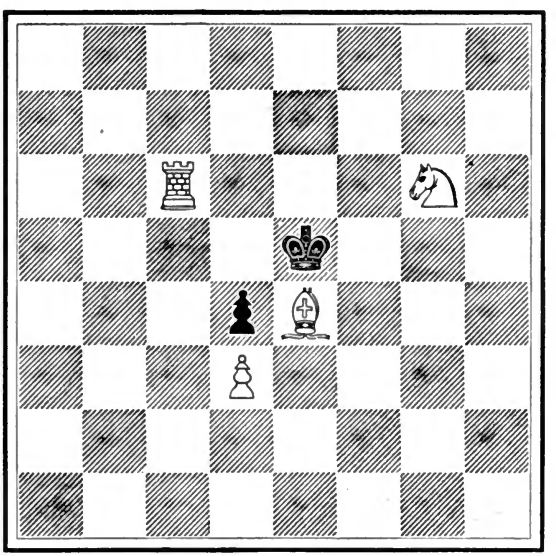
NOTE. — In evolutions combining a Knight lodgment, the Supporting Factor always must be defended by an Auxiliary Factor.

EVOLUTION No. 134.

FIGURE 238.

A Bishop Lodgment in an Objective Plane of Eight Radius.

Black.



White.

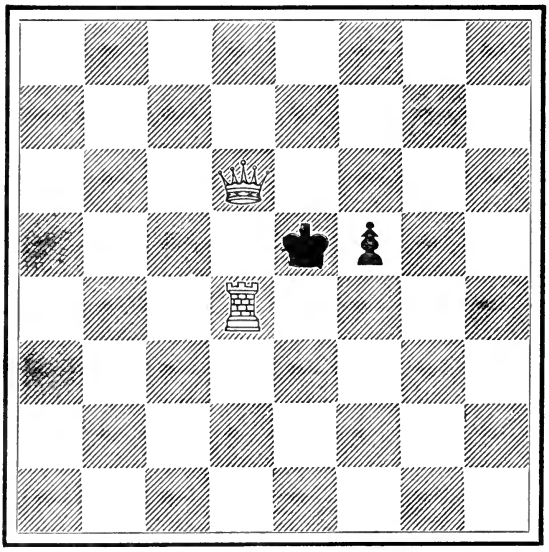
NOTE. — The Point of Lodgment must always be supported whenever it is established in any Objective Plane.

EVOLUTION No. 135.

FIGURE 239.

A Rook Lodgment in an Objective Plane of Eight Radius.

Black.



White.

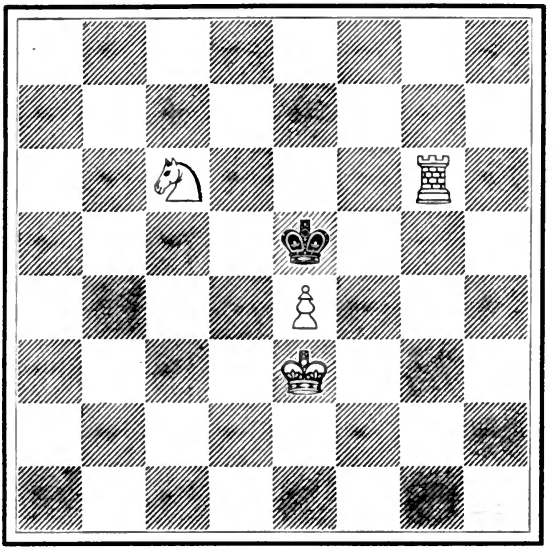
NOTE. — This is the only manner by which the O. P. 8 can be commanded by two pieces.

EVOLUTION No. 136.

FIGURE 240.

A Pawn Lodgment in Objective Plane of Nine Radius.

Black.



White.

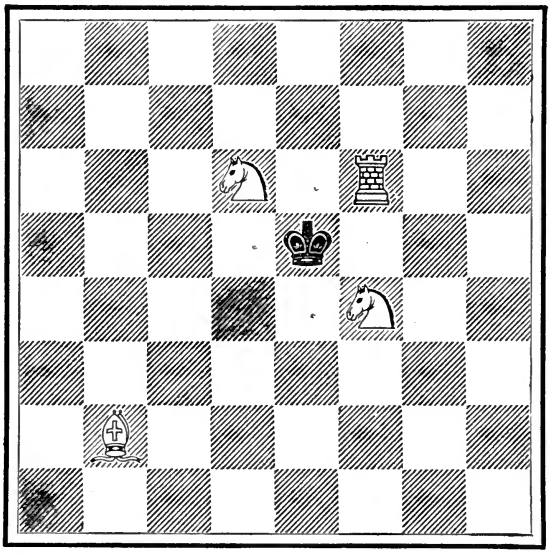
NOTE. — The union of the kindred King with a pawn lodgment is the most effective combination against an Objective Plane of nine radii which does not contain the Queen.

EVOLUTION No. 137.

FIGURE 241.

A Knight Lodgment in an Objective Plane of Nine Radius.

Black.



White.

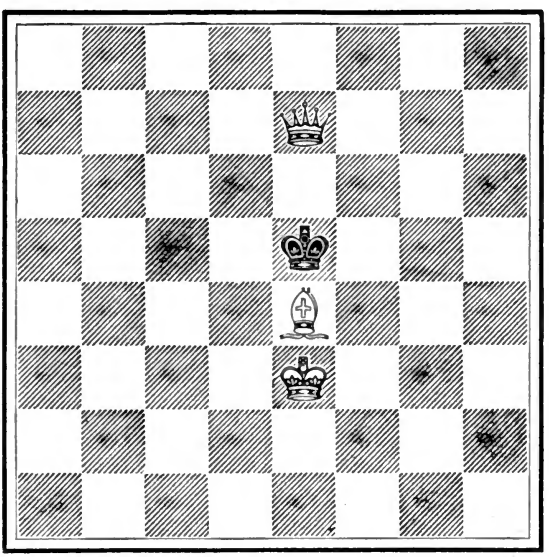
NOTE. — The above position is suggestive of a very pretty allegory.

EVOLUTION No. 138.

FIGURE 242.

A Bishop Lodgment in an Objective Plane of Nine Radius.

Black.



White.

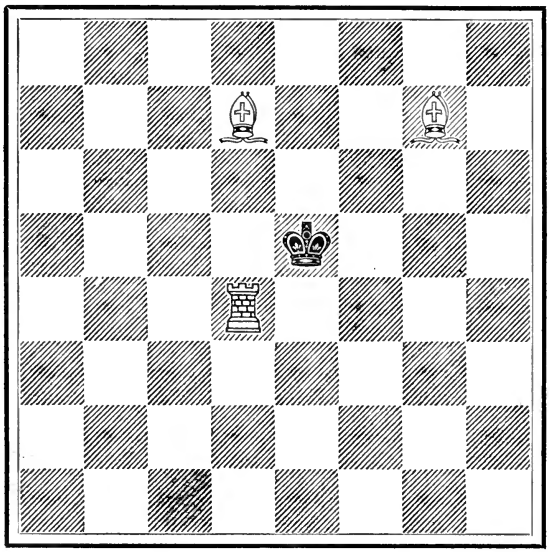
NOTE — This is the only manner in which this combination of force can command the Objective Plane of nine radii.

EVOLUTION No. 139.

FIGURE 243.

A Rook Lodgment in an Objective Plane of Nine Radius.

Black.



White.

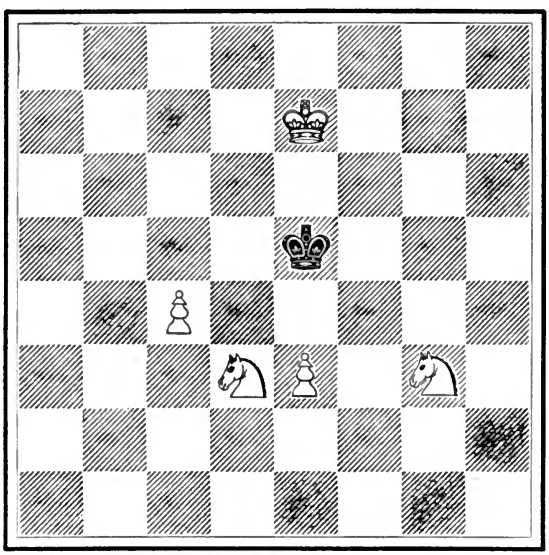
NOTE. — In an evolution against the O. P. 9, and whenever the kindred Queen is not present, three pieces are necessary to effect checkmate.

EVOLUTION No. 140.

FIGURE 244.

Command of an Objective Plane of Nine Radius by minor Diagonals and Obliques.

Black.



White.

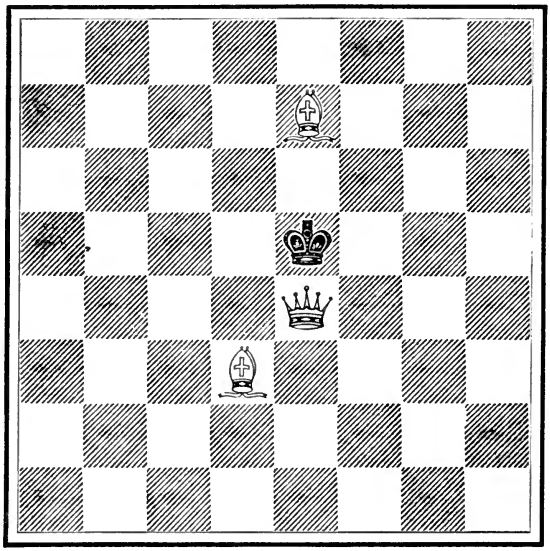
NOTE. — The student should observe that the power of the white force is derived from the presence of the pawn's diagonals. The white King is passive and unavailable for offence against the black King, and with both Knights but without the pawns the Objective Plane cannot be commanded.

EVOLUTION No. 141.

FIGURE 245.

Command of an Objective Plane of Nine Radius by Diagonals.

Black.



White.

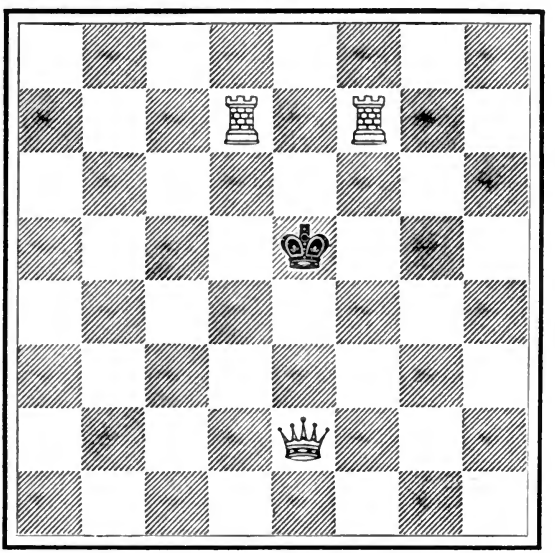
NOTE. — In any combination of the diagonal pieces against the O. P. 9, the Queen is always the Prime Tactical Factor.

EVOLUTION No. 142.

FIGURE 246.

Command of an Objective Plane of Nine Radius by Verticals and Horizontals.

Black.



White.

NOTE. — The O. P. 9 never can be commanded by less than three pieces.

LOGISTICS OF GEOMETRIC PLANES.

In each of the foregoing evolutions, there is depicted one of the basic ideas of Tactics; the *motif* of which is either the capture of an opposing piece, the queening of a kindred pawn, or the checkmate of the hostile King.

The material manifestation of each idea is given by formations of opposing *forces*, upon specified *points;* and the execution of the plan — i. e. the practical application of this basic idea in the art of chess-play — is illustrated by the movements of the given *forces*, from the given *points* to other given *points*, in given *times*.

Upon these movements, or evolutions, are based all those combinations in chess-play wherein a given piece co-operates with one or more kindred pieces, for the purpose of reducing the adverse material, or of augmenting its own force, or of gaining command of the Objective Plane; and there is no combination of forces for the producing of either or all of these results possible on the chess-board, in which one or more of these basic ideas is not contained.

Furthermore, the opposing forces, the points at which each is posted, and the result of the given evolution being determinate, it follows that the movements of the given forces equally are determinate, and that the points to which the forces move and the verticals, horizontals, diagonals, and obliques over which they move, may be specified and described.

As the reader has seen, the movements of the pieces in every evolution take the form of straight lines, ex-

tending from originally specified points to other necessary points; which latter constitute the vertices of properly described octagons, quadrilaterals, rectangles, and triangles.

The validity of an evolution, i. e. its adaptability to a given situation, once established, the execution is purely mechanical, and its practical application in chess-play is simple and easy; but to determine the validity of an evolution in any given situation is the test of one's understanding of the true theory of the game.

The secret of Major Tactics is to attack an adverse piece at a *time* when it cannot move, at a *point* where it is defenceless, and with a *force* that is irresistible.

The first axiom of Major Tactics is: —

A piece exerts no force for the defence of the point upon which it stands.

Consequently, so far as the occupying piece is concerned, the point upon which a piece is posted is absolutely defenceless.

The second axiom of Major Tactics is: —

A piece exerts no force for the defence of any vertical, horizontal, diagonal, or oblique, along which it does not operate a radius of offence.

Hence it is obvious that a pawn defends only a minor diagonal; that it does not defend a vertical, a horizontal, a major diagonal, nor an oblique; that a Knight defends an oblique, but not a vertical, a horizontal, nor a diagonal; that a Rook defends a vertical and a horizontal, but not a diagonal nor an oblique; that a Queen defends a vertical, a horizontal, and a diagonal, but not an oblique, and that a King defends only a minor vertical, a minor horizontal, and a minor diagonal, and does not defend a major vertical, a major horizontal, a major diagonal, nor an oblique.

It also is evident that an attacking movement for the purpose of capturing a hostile piece always should take the direction of the point upon which the hostile piece stands; and that the attacking force should be directed along that vertical, horizontal, diagonal, or oblique, which is not defended by the piece it is proposed to capture.

That is to say: the simple interpretation of Major Tactics is that you creep up behind a man's back while he is not looking, and before he can move, and while he is utterly defenceless you off with his head.

This, of course, is the crude process. But it does not appertain to savages alone; in fact, it is the process usually followed by so-called educated and civilized folk, whether chess-players or soldiers; furthermore, the final situation of the uplifted sword and the unsuspecting and defenceless victim is the invariable climax of every evolution of Major Tactics, whether the latter belongs to war or to chess.

It is admitted that men, whether soldiers or chess-players, have eyes in their heads, and that it is not supposable that they would permit an enemy thus to take them unawares and by such a simple and unsophisticated process. Nevertheless there is another process which leads to the same result; and this process is the quintessence of science, whether of war or of chess.

These two methods, one the crudest and one the most scientific possible, unite at the point at which the sword is lifted to the full height over the head of the unsuspecting and defenceless enemy. From thence they act as unity, for it needs no talent to cut off a man's head who is incapable of resistance, to massacre an army that is hopelessly routed, nor to checkmate the adverse

King in one move. In such a circumstance a butcher is equal to Arbuthnot; a Zulu chief to Napoleon; and the merest tyro at chess to Paul Morphy.

To attack and capture an enemy who can neither fight nor run is very elementary and not particularly edifying strategetics; but to attack simultaneously two hostile bodies, at a *time* and at *points* whereat they cannot be simultaneously defended, is the acme of chess and of war. In either case the result is identical, and success is attained by the same means. But the second process, as compared with the first process, is transcendental; for it consists in surprising and out-manœuvring two adversaries who have their eyes wide open.

The means by which success is attained in Major Tactics is the *proper use of time.*

"He who gains time gains everything!" is the dictum of Frederic the Great,—a man who, as a major tactician, has no equal in history.

To illustrate the truth of this maxim, the attention of the student is called to the simple fact that if, at the beginning of a game of chess, White had the privilege of making four moves in succession and before Black touched a piece, the first player would checkmate the adverse King by making one move each with the K P and the K B and two moves with the Q.

Again, in any subsequent situation, if either player had the privilege of making two moves in succession, it is evident that he would have no difficulty in winning the game. To gain this one move, — with all due deference to the shade of Philidor, — and not the play of the pawns, is the soul of chess.

But it is easy to see that gain of time can be of little advantage to a man who does not understand the proper use of time; and it is equally easy to see, if time is

to be properly utilized in an evolution of Major Tactics, that a thorough knowledge of the forces and points contained in the given evolution, and of their relative values and relations to each other, is imperative.

Hence the student of Major Tactics should be entirely familiar with these facts: —

Whatever the geometric plane, whether strategic, tactical, or logistic, no evolution is valid unless there exists in the adverse position what is termed in "The Grand Tactics of Chess" a strategetic weakness.

Assuming, however, that such a defect exists in the opposing force, and that an evolution is valid, it is then necessary to determine the line of operations. (See "Grand Tactics," p. 318.) If the object of the latter is to checkmate the adverse King, it is a strategic line of operations; if its object is to queen a kindred pawn, it is a logistic line of operations; if its object is to capture a hostile piece, it is a tactical line of operations.

The line of operations being determined, it only remains to indicate the initial evolution and the geometric plane appertaining thereto.

Whatever may be the nature of the geometric plane upon the surface of which it is required in any given situation to execute an evolution, the following conditions always exist: —

The Prime Tactical Factor always is that kindred pawn or piece which captures the adverse Piece Exposed; or which becomes a Queen or any other desired kindred piece by occupying the Point of Junction; or which checkmates the adverse King. The Prime Tactical Factor always makes the final move in an evolution; it always is posted either on the central point or on the perimeter of its own geometric symbol, and its objective

always is the Point of Command, which latter always is the central point of the geometric symbol appertaining to the Prime Tactical Factor.

The Prime Radii of Offence always extend from the Point of Command, as a common centre, to the perimeter of the geometric symbol appertaining to the Prime Tactical Factor, and upon the vertices of this geometric symbol are to be found the Points Material in every valid evolution.

The Point of Co-operation always is either coincident with a Point Material or is a point on the perimeter of that geometric symbol appertaining to the Prime Tactical Factor of which the Point of Command is the central point; it always is an extremity of the Supporting Front, and it always is united, either by a vertical, a horizontal, a diagonal, or an oblique, with the Supporting Origin.

The nature of a Geometric Plane always is determined by the nature of the existing tactical defect; the nature of the Geometric Plane determines the selection of the Prime Tactical Factor, and the character of the geometric symbol of the Prime Tactical Factor determines the nature of the evolution.

The student, therefore, has only to locate a tactical defect in the adverse position and to proceed as follows:

RULES OF MAJOR TACTICS.

Whenever a tactical defect exists in the adverse position: —

I. Locate the Piece Exposed and the Prime Tactical Factor.

II. Indicate the Primary Origin and the Points Material and describe that geometric symbol which apper-

tains to the Prime Tactical Factor and upon the perimeter of which the Points Material are situated.

III. Taking the Primary Origin, then indicate the Point of Command and describe the Front Offensive.

IV. Taking the Point of Command as the centre and the Points Material as the vertices of that logistic symbol which appertains to the Prime Tactical Factor, describe the Front Defensive and the Prime Radii of Offence.

V. Locate the Supporting Factor, then indicate the Point of Co-operation and the Supporting Origin, and describe the Supporting Front.

VI. Locate the Disturbing Factors, then indicate the Points of Interference and describe the Front of Interference.

VII. Taking the Fronts of Interference, locate the Auxiliary Factors; then indicate the Auxiliary Origins and describe the Auxiliary Fronts.

VIII. Taking the Front Offensive, the Front Defensive, the Supporting Front, the Fronts Auxiliary, and the Fronts of Interference, describe the Tactical Front.

Then, if the number of kindred radii of offence which are directly or indirectly attacking the Point of Command, exceed the number of adverse radii of defence which directly or indirectly are defending the Point of Command, the Prime Tactical Factor may occupy the Point of Command without capture, which latter is the end and aim of every evolution of Major Tactics.