Tree and Leaf[1]

This article is about a category of hoppers called Radial Leapers, Treehoppers and Leafhoppers. You can observe the link to the familiar *Grass*hopper!

The name ***Radial Leaper*** is a misnomer, since it is actually a hopper! It uses an **opposite coloured** piece, on **any line**, as a hurdle and hops **over it** to move/capture on to any square at the same distance. Moving back to its original square – a *stationary move*, is not allowed. Popeye uses the code RK for this hopper. This piece is treated identically by both Popeye and WinChloe.

The ***Treehopper*** uses any piece, of **any colour**, on **Q-lines** as a hurdle and hops **over it** to move/capture on to any square at the same distance. Stationary moves are not allowed. Popeye code: TH. WinChloe treats this piece similarly, except that the hurdle has to be a piece of the **opposite colour**.

The ***Greater Treehopper*** uses any piece, of **any colour**, on **any line** as a hurdle and hops **over it** to move/capture on to any square at the same distance. Stationary moves are not allowed. Popeye code: GE. WinChloe does not support this piece, but the help text wrongly states that it is equivalent to the ***Radial Leaper***!

The ***Leafhopper*** has a different method of "hopping". A hurdle of **any colour** on **Q-lines** needs to be present. The Leafhopper moves/captures on to any square **directly from its departure square** at the same distance as that between itself and the hurdle. The hurdle itself, if of opposite colour, cannot be captured. Popeye code: LH. WinChloe treats this piece similarly, except that the hurdle has to be a piece of the **opposite colour**.

The ***Greater Leafhopper*** needs a hurdle of **any colour** on **any line** to be present. It then moves/captures on to any square **directly from its departure square** at the same distance as that between itself and the hurdle. The hurdle itself, if of opposite colour, cannot be captured. Popeye code: GF. WinChloe treats this piece similarly, except that the hurdle has to be a piece of the **opposite colour**.

By now, it will be clear that, except for the Radial Leaper, the hurdle is treated differently by Popeye and WinChloe. Popeye allows a piece of any colour, whereas WinChloe restricts the hurdle to be of opposite colour. So, instead of 5, there are actually 8 different hoppers! To avoid confusion, the existing ambiguous WinChloe versions may be differentiated by adding the prefix Bichrome: *Bichrome Treehopper*, *Bichrome Leafhopper and Bichrome Greater Leafhopper*. Incidentally, the Radial Leaper can also be considered as a *Bichrome Greater Treehopper*!

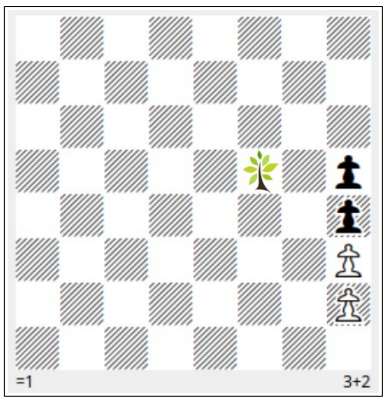
It's an obvious next step to restrict the hurdle to be of the **same colour** as the hopper. This adds 4 more new hoppers, of the **monochrome** variety!

We now have a total of 12 different hoppers which are listed in the table on the next page. A simple demonstration problem (=1) is also shown, with twinning (forsberg!) to illustrate the movement of all the 12 hoppers.

---

1 ***Tree and Leaf*** is one of the many books in the fantasy genre written by the great J.R.R.Tolkien, in addition to the more famous ***The Hobbit*** and ***The Lord of the Rings***. He is considered to the be the father of the modern fantasy genre, much like our T.R.Dawson is, of fairy chess. Indeed, Tolkien wrote an essay ***On Fairy Stories***, which discusses the fairy story as a literary form! And like our our fairy chess jungle, all his books have plenty of magical beings like Elves, Dwarves, Hobbits, Dragons, Trolls and even Fairies! So it's a happy coincidence to choose the title of one of his books for this article concerning *Treehoppers*, *Leafhoppers* and *Radial Leapers*!

#	Move Considered From	Colour of Hurdle Or Reference Piece	Move Directions	Existing Names and codes		Suggested New Names
				Popeye	WinChloe	
1	Hurdle	Any Colour	Any Line	Greater Treehopper (ge)		
2	Hurdle	Any Colour	Q-lines only	Treehopper (th)		
3	Hurdle	Opposite Colour	Any Line	Radial Leaper (rk)	Radial Leaper	
4	Hurdle	Opposite Colour	Q-lines only		Treehopper	Bichrome Tree Hopper
5	Hurdle	Same Colour	Any Line			Monochrome Radial Leaper
6	Hurdle	Same Colour	Q-lines only			Monochrome Tree Hopper
7	Departure Square	Any Colour	Any Line	Greater Leafhopper (gf)		
8	Departure Square	Any Colour	Q-lines only	Leafhopper (lh)		
9	Departure Square	Opposite Colour	Any Line		Greater Leafhopper	Bichrome Greater Leaf Hopper
10	Departure Square	Opposite Colour	Q-lines only		Leafhopper	Bichrome Leaf Hopper
11	Departure Square	Same Colour	Any Line			Monochrome Greater Leaf Hopper
12	Departure Square	Same Colour	Q-lines only			Monochrome Leaf Hopper



(Stalemate in 1 move)

a) White Radial Leaper f5
b) Treehopper f5
c) Leafhopper f5
d) Greater Treehopper f5
e) Greater Leafhopper f5
f) Bichrome Treehopper f5
g) Bichrome Leafhopper f5
h) Bichrome Greater Leafhopper f5
i) Monochrome Radial Leaper f5
j) Monochrome Treehopper f5
k) Monochrome Leafhopper f5
l) Monochrome Greater Leafhopper f5

a	b	c	d
RL	TH	LH	GTH
f5-f3(using h4)	f5-f1(using h3)	f5-d3[using h3]	f5-e4(using h2)
f5-g2(using h4)	f5-h7(using h5)	f5-d5[using h5]	f5-f1(using h3)
f5-g6(using h4)		f5-d7[using h3]	f5-f3(using h4)
f5-h7(using h5)		f5-f3[using h5]	f5-g2(using h4)
		f5-f7[using h5]	f5-g6(using h4)
		f5-h7[using h3]	f5-h7(using h5)

e	f	g	h
GLH	BTH	BLH	BGLH
f5-c3[using h2]	f5-h7(using h5)	f5-d5[using h5]	f5-d4[using h4]
f5-c7[using h2]		f5-f3[using h5]	f5-d5[using h5]
f5-d2[using h2]		f5-f7[using h5]	f5-d6[using h4]
f5-d3[using h3]			f5-e3[using h4]
f5-d4[using h4]			f5-e7[using h4]
f5-d5[using h5]			f5-f3[using h5]
f5-d6[using h4]			f5-f7[using h5]
f5-d7[using h3]			f5-g7[using h4]
f5-d8[using h2]			f5-h6[using h4]
f5-e3[using h4]			
f5-e7[using h4]			
f5-f3[using h5]			
f5-f7[using h5]			
f5-g7[using h4]			
f5-h6[using h4]			
f5-h7[using h3]			
f5-h8[using h2]			

i	j	k	l
MRL	MTH	MLH	MGLH
f5-e4(using h2)	f5-f1(using h3)	f5-d3[using h3]	f5-c3[using h2]
f5-f1(using h3)		f5-d7[using h3]	f5-c7[using h2]
		f5-h7[using h3]	f5-d2[using h2]
			f5-d3[using h3]
			f5-d7[using h3]
			f5-d8[using h2]
			f5-h7[using h3]
			f5-h8[using h2]

Some of these hoppers, including the 4 new ones, are yet to be programmed in Popeye and/or WinChloe. Looking ahead, we can stipulate that in the case of neutral pieces and half-neutral pieces (in the neutral state), they can be considered as hurdles of either black or white colour!

Have fun composing with these hoppers, and remember *The Way of the Leaf* !

"The leaf lives its appointed time, and does not struggle against the wind that carries it away. The leaf does no harm, and finally falls to nourish new leaves. So it should be with all men. And women."
- Aram (*The Wheel of Time*)

N.Shankar Ram
January 2022