

With the exception of the elements of portability, the three machines are very nearly alike with respect to the facility of management. But the Buckeye, when moving from place to place, folds its bar completely over on to the frame, while on the others it remains vertically on the side of the frame. This we think constitutes a strong claim to commendation on the score of portability. The casing of the shafts and gearing of the Clipper, makes that machine somewhat safer for the driver, but on the whole the horizontal folding of the finger-bar gives the Buckeye the preference for facility of management.

It follows clearly from this, that the Buckeye excels in the greatest number of points. We may possibly err in our judgment on the question of durability, but in relation to the other points there can be no question whatever, and we therefore award the Gold Medal in the first class to Adriance, Platt & Co., for their Buckeye Mower, entry No. 10.

#### CLASS II.

In this there were only two entries, viz., D. M. Osborne, No. 19, and C. Wheeler, Jr., No. 20. Osborne cut No. 11 in the Leach field, and did it most admirably. We never saw this work surpassed in any field. His mark for quality of work was (40,) which is the number of perfection. Wheeler cut No. (31) for quality of work. Osborne, therefore, receives the preference for quality of work. Neither machine was tested for draft, as a reaper, but both were tested as mowers, Osborne No. 19, being the same as mower No. 2. The only difference in the draft as hand rakers, would be caused by the increased weight of the platform, the extra chair and raker. As there would not be much difference in these additions, we shall not probably err in assuming the dynamometer results as mowers, as representing their comparative drafts as reapers.

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| Osborne, No. 2,..... | 212.41—Width of swath, 1.464 | yds.  |
| Cayuga, G. ....      | 233.95—do.....               | 1.423 |

The width of Osborne being 1½ inches wider, his draft was lighter by 21.54 lbs. We, therefore, give the preference to his No. 19, for ease of draft. In point of durability, we were unable to perceive that either had the preference over the other. In simplicity, Osborne evidently excelled. In facility for cutting lodged grain, we are of opinion that Wheeler's Cayuga G, had the advantage. With respect to side draft, Osborne showed two pounds, and Cayuga G, four pounds. Osborne's No. 19, therefore, has the preference in side draft.

With respect to the facility of management, we own that in some of the elements one machine, and in some the other machine, has slightly the advantage, but that on the whole the balance is so even, we cannot give to either a very decided preference for facility of management.

D. M. Osborne & Co., entry 19, having the greatest number of good points, and no bad ones which counterbalance the good qualities, we award the Gold Medal of this class to them.

#### CLASS 2½—Self Rakers.

There were five competitors for the prizes in this class. Of these, Seymour, Morgan & Allen, entry No. 27½, received as a mark for quality of work, (39,) and C. C. Bradley & Son, entry No. 22, also received the same number, (39.) None other of the competitors were marked as high. In the trial in Sheldon's lodged wheat, Seymour, Morgan & Allen's work was marked (38,) and C. C. Bradley & Son (37.) None of the other competitors received as high marks as these. In the rye lot, Seymour, Morgan & Allen were marked (40,) the highest mark of excellence, and they well deserved it. There was a high wind acting on the tall rye, and their gravels were laid in the most admirable manner, as was witnessed by the judges and the numerous spectators. C. C. Bradley & son were marked 37. In the barley field, Seymour, Morgan & Allen were marked 40. C. C. Bradley & Son were marked 39. In one trial the marks were equal: in the three remaining trials, Seymour, Morgan & Allen's marks were the highest, and we therefore adjudge them the preference for quality of work.

Without entering into an elaborate analysis of the machines, it may be sufficient to say that we decided that Seymour, Morgan & Allen's machine was the strongest and most durable. In regard to simplicity of construction, there was too little difference to demand a decided preference for either. If there is any, it is on the side of C. C. Bradley & Son. With regard to ease of draft in the trial field, the draft of

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|-------------------------------------|------------|
| Seymour & Morgan was, up hill,..... | 367.9 lbs. |
| On a level.....                     | 256.9 lbs. |
| C. C. Bradley & Son.....            | 233.8 lbs. |
| On a level.....                     | 200.0 lbs. |

C. C. Bradley & Son therefore have the preference for ease of draft.

Seymour & Morgan's record for side draft is 3 lbs; C. C. Bradley's, 5 lbs. In neither case is the amount objectionable, but as Seymour & Morgan's is the lowest, we must follow the record and award them the preference for side draft.

With respect for facility of management, there is very little difference between the two machines in the several elements which go to constitute facility. We think C. C. Bradley's seat for the driver is more easily accessible than Seymour & Morgan's, but this is counterbalanced by the superior outlook of the S. M.'s driver, by which he is better enabled to avoid obstacles, such as stumps, stones and ant hills, that could not be discovered from Bradley's seat. There is one element of facility of management in which S. & M. are decidedly superior. By an arrangement of an eccentric collar on the axle described elsewhere in this report, they are enabled to depress their sickle without changing the level of the platform, which is of the greatest advantage in lodged grain. Being nearly equal in other respects, the last feature alone induces us to give the preference, for facility of management, to Seymour & Morgan.

Seymour, Morgan & Allen have therefore a decided preponderance in the qualities which constitute a valuable Self-Raking Reaper—the only objection to it being its greatest draft, which is 56.9 lbs. in excess of Bradley's. This excess, in our opinion, is due to its greater weight, which is 218 lbs. more than Bradley's, and therefore increases its surface draft. But as this greater weight is caused by greater provision to secure its durability, it is much more excusable than if the draft had been consumed by increased friction.

We therefore award the Gold Medal in this class to Seymour, Morgan & Allen—entry No. 27½, especially with reference to its superiority in adaptation to various kinds of grain, and to varied circumstances of wind.

#### CLASS III—Combined Mowers and Reapers—Hand Rakers.

There were seven competitors in this class. The machines having the lightest mark for quality of work as Reapers in this class, were, in the Leach field, Cayuga Chief H, entry No. 36, (36;) Eagle, entry No. 20, (34;) W. A. Wood, entry No. 30, (33.) These machines in the clover lot were marked as follows:—Cayuga Chief H, (36;) Eagle No. 20, (38;) W. A. Wood, No. 30, (19.) Neither the Cayuga Chief nor W. A. Wood No. 30, mowed in the Monson meadow, but the Eagle did, the mark for quality of work being (37.)

In the lots where all competed equally, the Cayuga Chief and the Eagle appeared to be on precisely the same level—the Chief being just as much superior to the Eagle as a Reaper, as the Eagle was superior to the Chief as a Mower. In the Sheldon lot, working in lodged wheat, the Eagle is marked (35,) Wood (32,) and Cayuga H. (30.) This latter result gives the preponderance to the Eagle, and we therefore give the preference to it for quality of work. In the dynamometer field, Cayuga Chief H. required a traction of 223.32 lbs.; Wood's Combined No. 30, 203.22 lbs.; Eagle No. 29, 219.43. Wood's machine has therefore the preference for ease of draft. The side draft of the Eagle was 12½ lbs., that of Wood No. 30, was 3 lbs., that of Cayuga H. was 5 lbs. Wood's No. 30, therefore, has the preference for ease of side draft. Cayuga H. is less simple in its construction than Wood's or the Eagle, but the two latter vary very little in this respect, and no one of them can claim pre-eminence over the other. The Eagle is pre-eminently adapted to uneven surfaces, and is adapted to a much wider range of inequalities than Wood's. This quality requires that it should have the preference for facility of management.

On carefully comparing the Eagle and Wood's Mower, we find them so nearly alike with respect to strength, that we cannot give to either any preference on the score of durability. In this condition of the comparison, we consider the superiority of Wood's machine in ease of draft will give it the decided preference, and we, therefore, award the Gold Medal in this class to Walter A. Wood, entry No. 30.

#### CLASS IV.—Combined Reapers with Self-Raking or Dropping Attachments.

Ten competitors entered in this class. Williams, Wallace & Co., entry No. 42, was marked for quality of work in the Leach wheat field (39,) and in Sheldon's lodged wheat field (36.) Seymour, Morgan & Allen, entry 44, was marked for

quality of work (38) in the Leach lot, and (38) in the Sheldon lot—in rye (40). W. H. Halliday, entry No. 47, was marked for quality of work in the Leach lot (37,) in the Sheldon lot (40,) in rye (38.) W. W. & Co., No. 52, was marked for quality of work (38) in the clover lot and (38) in the Monson meadow. S. M. A., No. 44, was marked for quality of work in the clover lot (35) and in the Monson meadow (39.) W. H. H. No. 47, was marked for quality of work in the clover lot (28,) but did not mow with the machines in the Monson meadow. It appears from these data that Williams, Wallace & Co., are entitled to a slight preference for quality of work. The machine of W. W. & Co., is more simple than Seymour, Morgan & Allen's, but is entitled to no preference over Halliday's for simplicity of construction. S., M. & A.'s machine has the preference for durability.

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| The draft of Williams, Wallace & Co., was..... | 202.83 |
| do Seymour, Morgan & Allen.....                | 234.80 |
| do W. H. Halliday.....                         | 252.93 |

Williams, Wallace & Co., are therefore entitled to preference of ease of draft.

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|---|----|
| The side draft of Williams, Wallace & Co.,..... | 11 |
| do Seymour, Morgan & Allen.....                 | 3  |
| do W. H. Halliday.....                          | 7½ |

Seymour, Morgan & Allen, therefore, have the preference in ease of side draft. We are of opinion that the machine of Williams, Wallace & Co., is entitled to the preference on account of facility of management. W. W. & Co.'s machine having the greatest number of good qualities, we award the Gold Medal to them for their entry, No. 42.

#### CLASS V.

The highest mark made by any competitor in the reaping field was Dodge, Stevenson & Co., entry No. 52, which was (36,) and in Sheldon's lot (35.) The same machine was marked for quality of work, as low as (29.) As these were the best marks made in the class, we do not think that any one of them is entitled to a Gold Medal.

#### CLASS VI.

We award the Gold Medal in this class to R. L. Allen, entry No. 57.

#### Second Premiums.

Class 1st.—As the R. I. Clipper came so near to the first place, there can be no doubt of its right to the second place. We award to the R. I. Clipper Mowing Company, entry No. 18, a prize of \$25.

Class 2d.—We award to C. Wheeler, Jr., entry No. 20, letter G., a prize of \$25.

Class 2½.—To C. C. Bradley & Son, No. 2, a prize of \$25.

Class 3d.—To J. F. Herrington, entry No. 29, \$25.

Class 4th.—Seymour, Morgan & Allen, \$25.

Class 5th.—No second premium.

Class 6th.—To D. M. Osborne for his one horse Mower, entry No. 56, \$25.

#### ELEPHANT LIFE IN SOUTH AFRICA.

Commencing with the hugest specimen of nature's handiwork, the elephant, we have generally found two curious points overlooked or ignored by writers. One is the rapid and noiseless movements of this animal in the thickest cover; the other, his capabilities of passing over ground for him apparently unfeasible. The elastic noiseless foot-fall of the elephant has been frequently referred to by writers on Indian subjects, and has been rightly asserted to be the most agreeable feature in journeying on elephant back. This peculiarity may be easily explained by an examination of the structure of the animal's foot; but the silent, stealthy way in which he will pass through the densest thicket, literally "slipping away," when his acute senses of smell or hearing warn him of danger, has been generally overlooked, and appears to us somewhat difficult of explanation. Let any one unskilled in the mysteries of "bush-rangering," attempt to move even for a few paces in an ordinary fox-covert without noise, and he will form some idea of the difficulties presented to the passage of so huge an animal as the elephant through the dense tangled undergrowth of a South African "bush." Yet that that animal, despite his enormous bulk, will "draw off," when within a few yards of his pursuer, without the slightest noise, and with the greatest rapidity, even in the thickest cover, is undeniable. We may, however, remark that this faculty, or by whatever other term it may be described, is not peculiar to the elephant alone, for it has been observed to a marked extent in the moose or cariboo of North America. Again, his powers of passing over difficult ground are often underrated even by hunters. When experiments were

first made in India in training elephants to draw the guns, it was observed with surprise that the animal's powers of ascending steep and rugged ground were far greater than had been anticipated. The gun, a light six-pounder, with which the trial was first made, was drawn up a slope so steep as to require the animal to crawl upon its four knees, without hesitation. On the other hand, hampered by the gun and harness, the elephant (a small female) showed unusual dread of soft and swampy ground. In Africa, marshes do not seem to possess the same terror for these animals in their wild state; for if they offer tempting pools, however uncertain the footing may be, the elephants appear to find a track across them. In the river-courses, too, deepened as they are by the torrents of the rainy season many yards below the surface of the surrounding country, and having banks nearly perpendicular, small shady pools close sheltered from the sun's rays often remain in the hot season when the rest of the stream has disappeared, and to these, should no other way be open, may be found tracks of the animals, leaving no doubt they had reached the coveted water by slipping down on their posteriors. In what position the hinder legs are placed during this operation we cannot tell, but the "spoor" leaves no doubt of its having been repeatedly adopted in places apparently inaccessible. The elephants generally remain in the thickest part of the forest during day, making for the water, to which they often go long distances, shortly before midnight, and returning to cover some hours before dawn. We may here remark that, although these animals, owing no doubt to their acute sense of hearing and of scent, have never been surprised in a recumbent position; there is ample proof that the bulls, at any rate, usually rest lying on their sides. The late Mr. Gordon Cumming was, we believe, the first to note this fact, which we can ourselves confirm. He remarked that the sides of the enormous ant-heaps, so common in this region, were apparently preferred, and that the ground was often distinctly marked with the impression of the under-tusk as well as of the animal's body. The influence of the particular tract of country in which they are found upon these animals, and the influence which they, in their turn, like all other living creatures, exercise on their habitat, should not escape a short notice. On the borders of the Cape Colony and Natal, we find the few elephants that remain large in size, but with comparatively small tusks of inferior ivory. As we approach the equator, although food is more plentiful, we find the animals smaller in size, having far larger tusks, the latter, too, being of an ivory far superior in hardness and closeness of grain. Indeed, although naturalists have not recognized more than one species of the African elephant, the varieties of ivory exported from the north, west, south-west, south-east coast, and the Cape, have each marked differences of quality by which they are easily recognizable. The animals in turn, however, likewise affect the economy of the country they inhabit. The damage done even by a single elephant in a very short time to a patch of cultivated ground is truly frightful, and, having been once seen, would lead one to imagine that when these animals are herded together in vast troops such as the one seen by Dr. Livingstone on the banks of the Zambesi, consisting of over eight hundred, covering an extent of two miles of country, their course would be marked by utter desolation. The havoc thus caused is not, however, perceptible, a fact which that observant traveller has attributed, no doubt rightly, to the care shown by the elephants in the selection of their food—a point, as he justly remarks, often overlooked in estimating the quantity of food required by the larger animals. Again, all these animals, rhinoceri and hippopotami, included, are, as M. Krapf observed, the true pioneers, "the real pathmakers of the tropical forest, which, without their tracks, would be often utterly impenetrable to man." Further, these paths, leading, as they most frequently do, to water, are often the only open channels for the surface-flow of the heavy rainfalls, and thus materially contribute to the continuance of the water supply of the district, to the very existence of which they owe their formation. While the elephant does not thus destroy vegetation which would ruin the shelter which appears indispensable to him, on the other hand he directly assists the production of new growths by his habit of searching for the many succulent bulbs to be found below the surface of the soil in every open space.—Mr. H. Chichester in the *Intellectual Observer* for August.