

the two fluids. As the books on this subject always reckon this difference by so many degrees "Baume," or call the heavy liquid as being so much "specific gravity," and as ordinary persons have not the proper instruments to ascertain what these densities are, and indeed many do not know what specific gravity is, we have constructed the following rule for the use of our readers, and we hope that they will pay particular attention to it.

First get a pint measure constructed like an inverted funnel, with the spout cut off to about an inch in length, and a bottom soldered into the broad end. Take care that this vessel holds *exactly* a pint when filled to the brim. The use of bringing in the top to the size of half an inch is to ensure its holding *no more* than a pint of thick syrup. A broader top would allow the syrup to pile up (so to speak), and the measure would weigh too much.

Get a lead weight made which shall *exactly* balance this pint measure when empty. You will thus be enabled to weigh a pint of the liquid, irrespective of the weight of the measure. It is much better to get this weight made, and keep it with the measure, than be always balancing the measure every time you use it, and be less liable to mistakes.

Now, when you want to ascertain the density, or thickness, of syrup or other liquid, and to see that it corresponds with the specific gravity mentioned in the books or the instructions for the manufacture of beet root sugar—

RULE.—Multiply the specific gravity by $7\frac{1}{4}$, and the answer will be, almost exactly, the weight in grains of a pint of the fluid required to be weighed.

Thus we are told in the foregoing communication signed E. B. (under No. 4), "Concentrate the filtered juice to 30° Baume, about 1,245 specific gravity," &c. Now, a farmer or unlearned person wants to know how much a pint of syrup should weigh with ordinary scales and weights, when brought to this specific gravity; therefore, to put the above rule in practice,

Multiply the specific gravity 1,245 by $7\frac{1}{4}$.

$$\begin{array}{r} 7\frac{1}{4} \\ 8,715 \\ 311\frac{1}{4} \end{array}$$

9,026 grains.

Therefore, the syrup must be evaporated until a pint of it, when as cold as ordinary spring water, or 60° Fahrenheit by the thermometer, will weigh 9,026 grains.

One pound avoirdupois.....7,000 grains.
One ounce do 437½ "

So that the pint measure of syrup must weigh, when evaporated down to the right strength to crystallize into sugar, one pound four and a quarter ounces and twenty-six grains.

This rule holds good throughout the whole scale of specific gravity; so that any person who has scales and weights can get the gravity of his syrups, (if the scales are good enough, and easily turned,) quite as well as the most scientific manufacturer with his expensive instruments.

The syrup or other fluids tried in this way must always be of the temperature of 60° Fahrenheit by the ordinary thermometer.

VECTIS.

Stock Department.

Extraordinary Competition for Thoroughbred Stock.

We have often had occasion to call attention to marvellous sales of thoroughbred horses. In 1866, as Mr. Blenkiron and Messrs. Tattersall are little likely to have forgotten, the purchasers of racing stock went mad simultaneously all over the world. The yearlings disposed of during that culminating year of the Turf's "Hastings' era," on the occasion of the Middle Park Sale, and at the Hampton Court Paddocks, brought the largest average ever realized by Mr. Blenkiron or by the managers of the Royal Stud. Scarcely had Englishmen recovered from the astonishment provoked by the Duke of Hamilton's venture of 2,500 guineas for the Lady Elcho colt, when tidings reached us that at Maribyrnong, near Melbourne, an Australian breeder had sold 43 thoroughbred animals of all ages—and among them nine foals—for the enormous average of some £500 or £600. It has passed into a proverb, that in all the Anglo-Saxon nations, wherever their home may be, high-bred horses are better housed than low-born human beings, and command prices which, in the days of the Crusaders, would have sufficed for a King's ransom. But the commercial supremacy of that peerless animal, the British thoroughbred, is already seriously menaced. Within the last two decades another four-footed rival has arisen which threatens to dethrone the sons and daughters of Stockwell, Beadsman, or Parmesan from their pride of place. It is now some sixty years since one of England's choicest animal products—the pure bred "short-horn"—first sprang into existence. In 1810 the first great price ever given for a high-born bull was paid to Mr. Collins, for a magnificent animal which brought him what was then deemed the unheard of sum of £1,000. About the same time, a famous herd was started in Yorkshire, which has since filled America and Australia, no less than Europe, with its fame, and has produced sons and daughters to which for many years the premiums at the Royal Shows have constantly been awarded; while the bulls are annually let out for the enormous rent of from £200 to £300. Wherever in England, Scotland, Ireland, France, Germany, Russia, the United States, and Australia, short horns are bred, the name of Mr. T. C. Booth, of Warlaby, near Northallerton, is a household word. Nor does the other great herd of England, that which the late Mr. Bates raised at Kirklevington, upon the confines of Yorkshire and Durham, pale its ineffectual fires when compared with the Warlaby prodigies. Between them, Mr. Bates and Mr. Booth divide the palm of short-horn supremacy. Other herds there are

which occasionally call for notice, such as the Townley, Knightley, or Spencer breeds. But, whenever and wherever human names are proudly mentioned in connection with short-horns, the race for superiority is between the two famous Yorkshire breeders; while any other stock-raiser who attracts attention—be it the late Sir Charles Knightley or the late Lord Spencer; or Sir William Maxwell Stirling of Ksir—is spoken of as coming next to Mr. Booth or Mr. Bates, and as *proximus his, longo sed proximus intervallo*.

Rather more than forty years since Ireland caught the contagion of breeding "pedigree cattle." In 1829 the late Mr. Robert Holmes, by introducing into our sister island some excellent specimens of thoroughbred horses and pure-bred cattle, laid the foundation of a trade which will probably make the Emerald Isle richer than Ormus or Ind before many years have passed. The thoroughbred blood imported by Mr. Holmes has given us many famous Irish racehorses, which have graduated with distinction at Epsom, Newmarket, and Doncaster. But latterly the British Turf has seen no Harkaways, no Barons, no Faugh-a-Ballaghs, and on Mincepies; nor has the laudable effort of Lord Mayo to establish a large stud farm at Palmerston been hitherto successful. The importation, however, of short-horns into Ireland, of which Mr. Holmes was the originator, has already borne noble fruit, and last week it gave us two specimen sales in County Meath and County Donegal that have scarcely been surpassed by any record which the books of our two great shorthorn auctioneers—Mr. Strafford and Mr. Thornton—can exhibit. It has long been the fashion across St. George's Channel to speak of Mr. Thomas Barnes, of Westland Kells, in Meath, as "the Booth of Ireland." The late Mr. Barnes—for he died last spring—was a devout worshipper of shorthorns, at the knee of Mr. Holmes, by whose advice he bought two animals of the renowned Mantalini tribe. Mr. Barnes's next step was to hire a celebrated bull named Hamlet from Mr. John Booth, and in rapid succession many of the best-bred cattle to which Warlaby gave birth followed Hamlet across the Irish Sea. When, in 1853, the herd of Mr. Holmes was dispersed upon the death of its owner, Mr. Barnes was admitted to be the owner of the finest cattle in Ireland. His blood was much sought by English breeders, and in 1861 Lady Pigot astonished the world by giving £500 for a Mantalini heifer named Victoria. Within the last ten years the celebrity of the herds owned by Mr. Barnes in Meath, and by his friend Mr. Grove in Donegal, has been justly and universally recognized. Nor is it of much moment that a few Irish maniacs should try to blow up the *George the Fourth Obelisk* at Kingstown, when, simultaneously, we can point to two Irish sales of shorthorns in which 88 head of cattle have been sold at an