which exceeds the derham of Bushire by nearly 7 grains. Pearls are weighed by the abas of 2·25 troy grs. The measures are not . less variable than the weights. The guz or common cubit = 25 Brit. inches, and the royal guz is one half longer. The archin of Tabriz = 44 Brit. inches. There are 20 leagues or parasangs in a degree of the equator ; but it is by the fursoch or augage, that is, the space of about four or five Brit. miles walked over by a horse in an hour, that moderate distances are usually reckoned. Greater distances are estimated by the day’s march of a caravan, which may be about 30 miles. ïn corn measure, 200 sextarios = 50 chenicas = 25 capichas = 1 artaba = 1·939 Brit, bushels.

*Peru.—*The same as in Spain.

*Philippine Isles.—*The same as in Spain, except that the Chinese

pecul is sometimes used.

*Poland.—*Of the weights, 128 drachms = 32 loths = 16 oz. = 1 lb. =0·89414 lb. avoird. ; 32 lbs. of Poland = 1 stone, and 160 such lbs. = 1 centner. The Cologne mark is used for coined gold and silver, but the Warsaw mark = 3113 grains troy for the un­coined. Two feet = 1 ell or Iokci = 22·68 Brit/ inches. The mile is the twentieth part of a degree of the meridian. There are 300 perches in the acre or morgen, = 1·384 Brit, acre: and 30 morgens make 1 wloka. Also 16 liquid kwaterkas = 4 kwartas = 1 garniec = 4 French litres = 0·88039 Brit. gall. ; and 25 gamiecs = 1 becsksa. Of corn, 128 kwartas = 32 gamiecs = 4 cwiercs = 1 korsec = 3·5214 Brit. bushels.

*Popedom or Papal State.—Of* the commercial weights, 6912 grani = 288 denari = 12 once = l Roman lb. = ·7477 lb. avoird. The same lb. is also used by apothecaries and for gold and silver ; and 100 such lbs. = 10 decine = 1 quintal. The foot = 11·72 Brit. inches ; 8 palmi = 1 mercantile canna = 6·52917 Brit. feet. The Roman mile = 1628 Brit. yds. Also 128 fogliette = 32 boccali = 1 barile of wine= 12·84 Brit. gall.; 80 boccali = 1 soma of oil = 36·14 Brit, gall; and 88 quartucci = 22 scorzi = 4 quarte = 1 corn rubbio = 8·1 Brit, bushel. In Ancona, 100 lbs. = 73·70 lbs. avoird. ; the braccio = 25·33 Brit. inches ; and 24 boccali = 2 barili = 1 wine soma = 18·9 Brit. gall. Also 8 coppe = 1 corn rubbio = 7·87 Brit. bushels. In Bologna, the lb. = ·798 lb. avoird., and the foot = 15 Brit. inches.

*Portugal.—*Of the commercial weights, 32 marks = 16 oz. = 1 arratel or lb. = 1·0119 lb. avoird. ; and 32 arratels = 1 arroba. There are 4 arrobas in the quintal, and 54 in the tonelada. The apothecaries’ lb. is only three fourths of the commercial. There are 8 inches in the palmo craveiro, = 8-622 Brit. inches ; the pe or foot = 1·5 palmo ; 5 palmos = 1 varo ; and though three palmos are usually said to form the varo, it is more nearly 26∙67 Brit. inches. Ten palmos = 1 braco ; the mile = 2253 Brit. yds. ; and 3 miles = 1 league. Of land, 4840 square varos = 1 geira ; and 7 geiras make nearly 10 Brit, acres. Of liquids, 48 quartilhos = 12 canadas = 2 pots = 1 almude of Lisbon = 3·64 Brit. gall. ; there are 18 almudes in the baril, 26 in the pipe, and 52 in the tonelada. In dry measure, 240 quartos = 60 alquieres of Lisbon = 15 fane-gas =1 moyo = 22·39 Brit. bushels. The almude of Oporto = 5·61 Brit. gall., and the alquiere of Oporto = ·465 Brit. bushel.

*Prussia—Of* the commercial weights, 128 quintins = 32 loths = 2 Cologne marks = 1 lb. = 1·0311 lb. avoird. ; and 110 lbs. = 1 centner or quintal = 113·42 lbs. avoird. There are 4000 lbs. in the ship last ; and the apothecaries’ lb. is only two thirds of the commercial. The Cologne mark is used for gold and silver. The Rhinlaιιd foot = 12·356 Brit. inches; the ell = 26·26 of such inches ; and 2000 perches = 1 mile = 8237 Brit. yds. There are 180 sq. perches in the morgen or acre, = 3054 Brit. sq. yds.; and 30 morgen = 1 hufe. Also 120 quarts = 4 ankers = 2 eimers = 1 liquid ohm = 30·23 Brit. gall. ; 3 eimers = 1 oxhoft ; 100 quarts = 1 tun of beer; and 48 quarts = 16 metzen = 1 corn scheffel = 1·512 Brit. bushel. Various old measures are still partially in use.

Prusso-German commercial league or Zoll-Verein is composed of Anhalt Bernbourg, Anhalt Cothen, Anhalt Dessau, Baden, Ba. varia, Birkenfeld (part of Oldenburg), Frankfort, Hesse Cassel, Hesse Darmstadt, Hesse Homburg, Hohenzollern Hichengeu, Hohenzollern Sigmaringen, Nassau, Prussia, principalities of Reuss, Saxony, Saxe-Altenburg, Saxe-Coburg Gotha, Saxe- Meiningen, Saxe-Weimar, Schwarzburg Rudolstadt, Schwarz­burg Sondershausen, Waldeck (exclusive of Pyrmont), Wur­temberg. The basis of their tariff is the centner of Baden = 50 French kilogrammes, and divided into 100 pounds or livres usuelles of France. Hence the zoll centner of 100 lbs. = 110·2429 lbs. avoird. The following relative values are given in the tariff ;—

935·422 zoll lbs. = 1000 Prussian lbs. 1120· = 1000 Bavarian lbs.

2000- = 1000 kilogrammes.

935·456 = 1000 Würtemberg lbs.

933 673 = 1000 Saxon (Dresden) lbs.

Or 14 zoll lbs. = 15 Prussian lbs nearly.

28 = 25 Bavarian lbs.

2 = 1 kilogramme.

14 =15 Würtemberg nearly.

14 = 15 Saxon (Dresden) lbs. nearly.

*Russia.—*Of the weights, 96 zolotnicks = 32 loths = 1 lb = •90264 lb. avoird. With this lb., which is used for most purposes, gold and silver are also weighed, it being divided into 6528 grains. The Nuremberg lb. of 5527 grains troy is used by the apothe­caries. The British and Dutch feet and inches are employed. The Russian foot = 13 75 Brit, inches; 16 verchoks= 1 archine for cloth = 28 Brit. inches ; and 1500 archines = 500 sagenes = 1 verste or mile = 1167 Brit. yds. Also 2400 sq. sagenes = 1 de- ciatine=2∙7 Brit, acres; and 100 tcharkeys = 2-705 Brit. gall. Of corn, 64 garnietz = 32 tchetverkas = 8 tchetveriks = 4 payaks = 2 osmines = 1 chetwerk = 5·77 Brit. bushels. Various old standards are partially in use in different parts of the empire

*Sardinia—*In Turin, 12 oz = 15 mark = 1 lb. = ·8133 lb. avoird. ; 25 lbs. = 1 rubbio ; and the mark of 3795 grs. troy is used for gold and silver. The raso or ell = 23∙6 Brit. inches ; the mile = 2697 Brit. yds. ; the giornate = ·938 Brit. acre; the wine rubbio = 2·07 Brit. gall. ; and the corn sacco = 317 Brit, bushels. In Nice, 150 lbs. = 1 quintal = 103·14 lbs. avoird.; the ell = 3·8975 Brit. feet; 12 rubbi= 1 charge = 20·75 Brit. gall.; but the charge of corn = 4∙4 Brit. bush. In Cagliari, 12 oz. = 1 lb. = ∙875 lb. avoird. ; the raso = 21·63 Brit, inches, and the restiere = 4 04 Brit. bushels.

*Saxony.—*In Dresden, the lb. = 1·0293 lb. avoird. ; 110 lbs. =≈ 1 centner; the mark =3602 grs. troy; two feet= 1 ell = 22 3 Brit inches; 3200 feet= 1 mile = 9914 Brit. yds. ; the morgen or acre= 1-261 Brit. acre; the liquid eimer= 14·84 Brit. gall. ; the scheffel = 2-859 Brit, bushels. In Leipzig, 32 loths = 1 lb. = 1·0301 lb. avoird. ; the centner= 110 lbs. = 113·32 lbs. avoird. Two feet = 1 ell = 22·24 Brit. inches ; 60 ells = 1 schock ; the liquid eimer = 16·69 Brit. gall. ; the old scheffel for corn = 3·812 Brit. bushels. The Dresden scheffel, which is one third greater, is now the general standard.

*Siam*—The common weight is the catty = 2·67 lbs. avoird., which is double the Chinese catty ; but the pecul, containing only 50 catties, is just equal the Chinese pecul. Also 8 spans = 4 cubits = 1 fathom = 6·5 Brit, feet ; 20 fathoms = 1 sen ; but a square area of 20 fathoms to the side is likewise named a sen.

*Sicily*—Thecantarro grosso = 192-53 lbs. avoird. ; the cantarro sottile = 175·03 lbs. avoird. The lb. = ·70∙4 lb. avoird. Gold and silver are weighed and valued as at Naples ; 94 cubic French feet of the old standard = 5 salmes = 1 ship ton. Oil is sold in Mes­sina by the caffiso, = 2·58 Brit. gall. The canna = 81·35 Brit. inches; the wine tonna = 31·24 Brit. gall.; the corn salma = 7·61 Brit. bush., and the salma grossa of Leghorn = 9·47 Brit. bushels.

*Sincapore—*The Chinese pecul of 133·33 lbs. avoird. is the usual

weight. The covid for cloth = 18 Brit. inches ; the gantang, by which corn, fruit, and liquids are occasionally sold, = 1·04 Brit. gall. European commodities are often sold by British weights and measures.

*Spain* Two marks =1 lb. = 1·01443 lb. avoird. ; the arroba

consists of 25, and the quintal of 4 lbs. The mark used for gold and silver is = 3550 grains troy. Twelve pulgados = 1 Burgos foot = 11·128 Brit. inches ; 4 palmos = 1 vara or ell = 33·38 Brit. inches. The estadale = ]2 feet; 8000 varas=l league = 7418 Brit. yds. A degree is divided into twenty marine leagues ; 5378 sq. varas = 1 aracada of vine land ; and 6000 sq. varas = 1 fanc- gada of corn land. The greater or wine arroba = 3 54 Brit. gall., thc less or oil arroba = 2·77 ; the pipe = 27 of the greater arrobas, or 34·5 of the less : the corn fanega = 1·55 Brit. bushels ; and 12 fanegas = 1 cahiz. But a variety of local standards is also in use.

*Sweden* The lb., victual weight, = 6563 grains troy ; the lispund contains 20, the sten 32, the centner 120, the waag 165, and the skeppund 400 such lbs. Two feet = 1 ell = 23·38 Brit. inches; 8 ells = 1 ruthe ; 2250 ruthes = 1 mile = 11,689 Brit. yds. ; the tunnaland = 1·22 Brit. acre. The liquid kann = ·5756 Brit. gall. ; the fuder contains 300, the pipe 180, the oxhufvud 90, and the ahm 60 kanns. The corn tunna = 4·029 Brit. bushels. But va­rious other measures and local standards are in use.

*Switzerland* In 1837 the 12 cantons, Berne, Zürich, Lucerne,

Friburg, Zug, Soleure, Basel, Aargau, Thurgau, Schaff hausen, Gla. rus, and St Galen, adopted the following standards, founded on the decimal system of France; 32 loths = 1 lb. = half a kilogramme =

1·1024 lb. avoird. ; 2 feet = 1 ell = 6 decimetres ; and 1 stund = 4800 metres = 5249 Brit. yds. The liquid mass =1·5 litre =

2·64 Brit. pints; ten mass of corn = 1 viertel = 15 litres = 1·05 Brit. peck. In Geneva, besides the French system, 100 lbs gros poids = 121·43 lbs. avoird. ; 100 lbs. petit poids = 101 19 lbs.