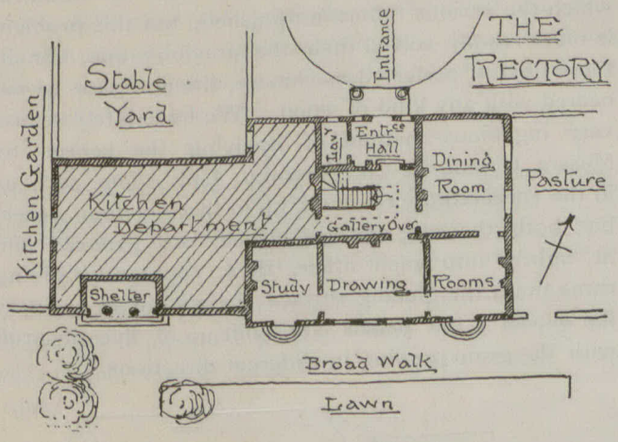
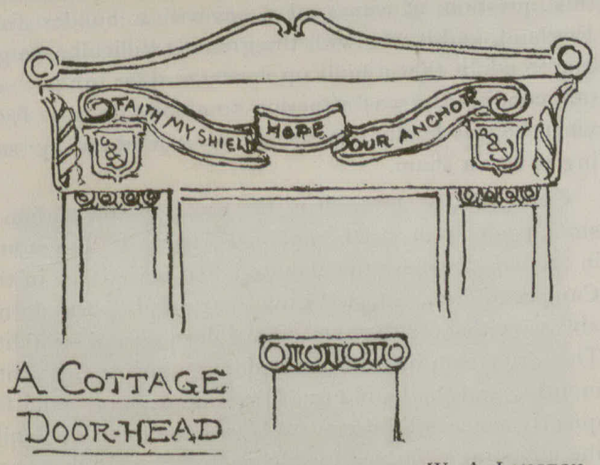
was open to the suspicion of looking more knowing than it was. It looked as if buttresses would be better in every way. It was interesting to meet here a ha ha fence. The pasture, on the east, was enclosed by a stone wall; but, instead of running past the south front of the house, to enclose the lawn, this wall, when it came to the east line of the house, dipped underground and became the retaining wall of a wide ditch. As the ditch was invisible from the drawing room windows. the effect was of an unbroken slope of grass, stretching



away in boundless continuity to the rising and wooded ground of the park.

The hall, which we saw in the afternoon, is of the Italian period and dull; but size and stone are always something, and a stone flagged terrace, about 30 feet wide and 90 feet long, handsomely balustraded, with the valley of the park seen beyond, stretching away in a perspective of heavily wooded slopes, is a vision to remember as long as possible.



A COTTAGE DOOR-HEAD

W. A. LANGTON.

A BUILDING COMBINE.

To the Editor of the CANADIAN ARCHITECT AND BUILDER:

SIR,—I have learned from a reliable source that some fifteen Toronto contractors who were asked to submit tenders for the construction of a new grand stand at the Woodbine race course, after laying their heads together, agreed on a uniform basis for tendering. It was further agreed that whichever one of their number might receive the contract must give the sum of one hundred dollars to each of the unsuccessful tenderers.

It is a well-known fact that there has existed for some time in Toronto a combination among heating contractors, the fact being clearly enough apparent from the character of the tenders.

Some architects have already brought in outside contractors to do their work, and express their purpose of following the practice to a much larger extent if such illegitimate methods of getting fancy prices are persisted in by local contractors.

I think it only right that this sort of thing should be exposed even at the risk of frightening persons out of the idea of building.

FAIR PLAY.

EFFECT OF VARIATIONS IN WATER AND SAND ON CEMENT.

TENSILE STRENGTH OF CEMENT MORTAR WITH SAND GRAINS OF DIFFERENT DIAMETERS. ARE THE AVERAGE OF 6 BRIQUETTES. RESULTS GIVEN

Sand gauge. Per cent. used. No. 30	No. 20	No. 100	Fine	Water, per cent.	Natural cement mortar, 1 to 1. "Union." 7 days	28 days	6 mos.	Water, per cent.	"Hoffman." 7 days	28 days	6 mos.	Water, per cent.	Portland mortar, 2 to 1. Giant. 7 days	28 days	6 mos.
100				17	156	193	352	15	115	163	314	10½	286	288	412
	100			17	151	194	349	15	118	146	286	10½	294	331	473
		100		17	153	187	340	15	91	110	257	10½	201	226	294
			100	17	100	123	307	15	71	76	186	10½	129	159	223
80				17	154	210	358	15	94	124	301	10½	361	380	486
70	10			17	142	180	332	15	86	107	254	10½	301	303	428
60	15	12½	2½	17	143	192	342	15	83	107	285	10½	307	311	419
50	20	15	5	17	140	208	345	15	80	89	291	10½	391	400	538
40	25	17½	7½	17	133	197	362	15	90	82	296	10½	350	355	475
30	30	20	10	17	123	191	329	15	78	77	266	10½	362	359	478
30	25	30	15	17	128	199	318	15	66	73	285	10½	317	374	480
20	20	40	20	17	122	201	324	15	68	72	221	10½	291	354	488
10	15	50	25	17	108	193	317	15	62	70	239	10½	247	287	351
50	50		50	17	154	222	323	15	82	107	316	10½	440	408	542
50			50	17	150	210	344	15	78	88	290	10½	309	336	438
50	25		25	17	125	183	302	15	74	68	250	10½	279	337	447
25		Crushed quartz	25	17			3 mos.				3 mos.				3 mos.
40		60		16	179	256	355	14	93	100	142	9½	257	331	351

MEMO.—All proportions and percentages determined by weight. Natural sand used; first passed through No. 8 screen and residue excluded. No. 30 sand passed No. 20 screen and caught on No. 30 screen; No. 20 sand passed No. 8 screen and caught on No. 20 screen; No. 100 sand passed No. 30 screen and caught on No. 100 screen. "Fine" is clean white sand sifted through the No. 100 screen.

Tensile Strength of Cements Mixed Neat With Different Proportions of Water.

Water, Per cent.	Wire minutes. Light.	Heavy.	Tensile Strength. 24 Hour.	7 Days.	28 Days.	3 Mos.	6 Mos.	12 Mos.
			Giant Portland.					
15	12	207	371	655	875	941	720	787
16	29	297	303	750	973	1,008	735	816
18	80	355	260	649	773	831	645	748
20	142	402	233	500	693	716	621	676
22	268	473	184	546	635	658	601	589
24	327	912	167	539	649	644	629	755
			Atlas Portland.					
13	13	270	366	775	859	1,067	892	832
14	18	303	404	780	891	972	852	781
16	22	327	363	602	725	844	806	723
18	15	383	308	570	723	785	728	724
20	56	703	225	590	718	760	674	636
22	52	833	166	554	649	731	643	604
24	188	918	42	510	691	695	632	574
			Union Portland.					
23	13	32	212	251	252	311	275	356
25	18	39	185	218	215	289	300	341
27	21	42	150	188	220	257	272	314
29	20	52	128	178	202	246	248	256
31	21	57	112	173	199	224	259	309
33	27	85	104	172	182	267	246	290
35	38	137	93	121	178	260	286	319
37	34	160	85	108	168	262	306	326
39	67	233	85	119	202	252	371	400
			Hoffman Rosendale.					
23	22	59	138	177	271	332	284	264
24	..	78	125	141	264	342	309	310
25	35	120	150	164	216	308	318	321
27	49	143	117	116	194	305	345	272
29	76	166	96	105	164	272	320	267
31	117	212	72	72	159	270	371	225
33	115	235	62	71	147	277	379	244
35	127	400	50	64	112	245	318	315
37	198	828	59	62	96	...	284	351
39	260	1,057	54	56	85	...	355	364

NOTE.—Results tabulated are the averages of six briquettes. The residue left on sieves of 50, 100 and 180 mesh were: Giant, 0.15, 5.4 and 21.2 per cent. respectively; Atlas, 0.1, 7.0 and 18.0; Union, 0.1, 4.6 and 10.2; Hoffman, 2.3, 12.4 and 21.9.

A heating boiler for steam and hot water, designed to burn coke, has recently been placed on the United States market by the American Radiator Co. The McEachren Heating and Ventilating Co. of Galt, Ont., have been manufacturing a boiler in which during the coal famine last winter, coke was success fully burned.